Proposition 84 Integrated Regional Water Management Planning Grant (Round 1)

San Francisco Bay Area IRWM Region

Planning Grant Application

Attachment 3. Work Plan (1 of 2)

San Francisco Bay Area Integrated Regional Water Management Plan
Coordinating Committee
September 28, 2010

Proposition 84 Integrated Regional Water Management Planning Grant (Round 1)

San Francisco Bay Area IRWM Region

Planning Grant Application
Background Section

BACKGROUND

San Francisco Bay Area Integrated Regional Water Management Plan
Coordinating Committee
September 28, 2010

This Page Intentionally Left Blank

Table of Contents

List of Tables

List of Figures

Abbreviations

ABAG	Association of Bay Area Governments
ACWD	Alameda County Water District
BACWA	Bay Area Clean Water Agencies
BAFPAA	Bay Area Flood Protection Agencies Association
BARWRP	Bay Area Regional Water Recycling Project
BASMAA	Bay Area Stormwater Agencies Association
BAWAC	Bay Area Water Agencies Coalition
BAWN	Bay Area Watershed Network
BAWSCA	Bay Area Water Supply and Conservation Agency
CC	Coordinating Committee
CCWD	Contra Costa Water District
EBMUD	East Bay Municipal Utilties District
EJCW	Environmental Justice Coalition for Water
FAD	Functional Area Documents
FP-SM	Flood Protection-Stormwater Management Functional Area
LOMU	Letter of Mutual Understandings
RWQCB	Regional Water Quality Control Board (San Francisco)
SCVWD	Santa Clara Valley Water District
SCWA	Sonoma County Water Agency
SFEP	San Francisco Estuary Partnership
SFPUC	San Francisco Public Utilities Commision
SWRCB	State Water Resources Control Board
WM-HP&R	Watershed Management and Habitat Protection and Restoration Functional Area
WS-WQ	Water Supply-Water Quality Functional Area
WW-RW	Wastewater-Recycled Water Functional Area

This Page Intentionally Left Blank

Section A History of Bay Area Integrated Regional Water Management Planning

The San Francisco Bay Area has a long history of regional cooperation and planning in water resources planning. In 2004, with the advent of State bond measures aimed at promoting a new model of integrated regional water management throughout California, Bay Area water, wastewater, flood protection and stormwater management agencies; cities and counties represented by the Association of Bay Area Governments; and watershed management interests represented by the State Coastal Conservancy and non-governmental environmental organizations signed a Letter of Mutual Understandings (LOMU), detailing their intent to develop the San Francisco Bay Area IRWM Plan for the nine-county Bay Area.

Given the large geographic scope of the Bay Area region (all or parts of nine counties with over six million people) and the wide range of water management strategies being implemented, original development of the IRWM Plan was approached as a two-step process.

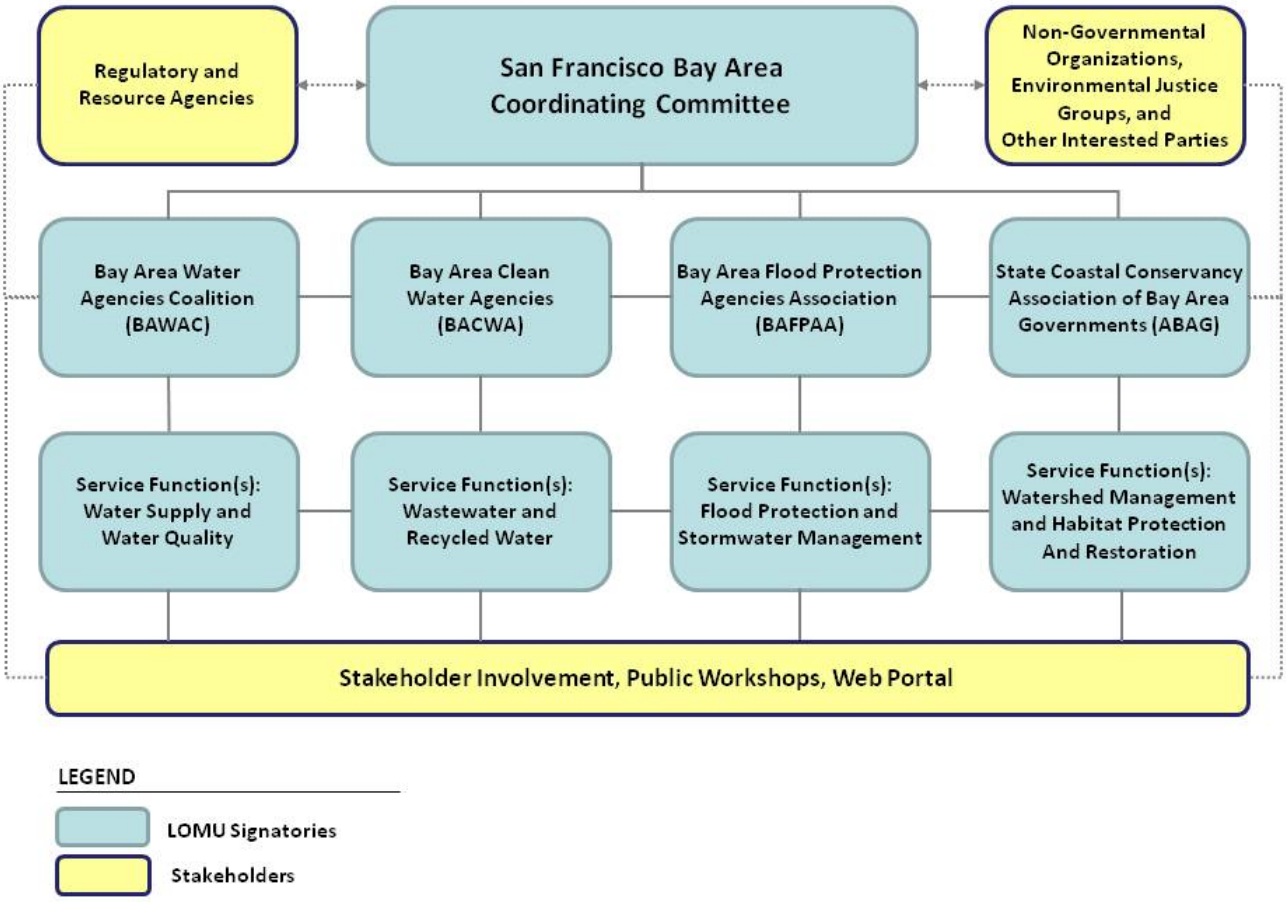
Four water management service areas (also known as Functional Areas) were established for the region: Water Supply and Water Quality, Wastewater and Recycled Water, Flood Protection and Stormwater Management, and Watershed Management and Habitat Protection and Restoration. Each of these four Functional Areas developed a comprehensive "Functional Area Document" in order to identify specific needs and challenges relating to the specific Functional Area, describe water management strategies and approaches to address these needs, and develop an initial list of potential strategies and implementation projects that would maximize benefits and enhance opportunities for regional cooperation within a given Functional Area. Next, the four Functional Area Documents were integrated, creating a foundation for the San Francisco Bay Area IRWM Plan.

In accordance with the Letter of Mutual Understandings, signed in 2004, a Technical Coordinating Committee was set up to provide oversight during development of Functional Area Documents, overall Plan development and adoption of the IRWM Plan in December, 2006. In accordance with guidelines presented in the IRWM Plan, this group was reconstituted as the San Francisco Bay Area IRWM Plan Coordinating Committee (CC) in January, 2007.

A.1 Composition of the Regional Water Management Group (RWMG)

The Coordinating Committee (CC) is the "regional water management group" for the San Francisco Bay Area Integrated Regional Water Management (IRWM) Plan. The Coordinating Committee is composed of representatives from the Bay Area's water supply agencies, wastewater agencies, flood control agencies, ecosystem management and restoration agencies, regulatory agencies and nongovernmental organizations. These organizations are grouped into respective "Functional Areas," which form the foundation of the governance structure of the CC (**Figure 1**).

Figure 1: San Francisco Bay Area IRWM Region Governance Structure



The Coordinating Committee (CC) provides oversight for IRWM Plan implementation and makes decisions and takes actions in order to manage the ongoing IRWM planning process. Decisions made by the CC are conducted via general assent or consensus of all those present and participating, whenever possible. Provisions for making decisions via voting procedures have been established in the event they are needed. The CC is composed of a non-voting chair and vice chair, individuals from resource and regulatory agencies, non-governmental organizations and other interested stakeholders, and twelve voting representatives (three from each Functional Area). Voting representatives are appointed by their respective Functional Area groups to represent their interests in CC discussions and actions. **Table 1** lists the current set of organizations that represent the four Functional Areas.

A.1.1 Voting Members

Voting members include three representatives selected from each of the four Functional Areas of the IRWM Plan – (1) Water Supply and Water Quality, (2) Wastewater and Recycled Water, (3) Flood Protection and Stormwater Management, and (4) Watershed Management and Habitat Protection and Restoration (Table 1). In the case of the first three Functional Areas, the representatives are mid- to senior-staff members of public agencies. The three representatives

of the Watershed Management and Habitat Protection and Restoration Functional Area come from the State Coastal Conservancy, San Francisco Estuary Project and the North Bay Watershed Association.

Table 1: Functional Area Representative Agencies

(1) Water Supply/Water Quality	(2) Wastewater and Recycled Water	(3) Flood Protection and Stormwater Management	(4) Watershed Management and Habitat Protection and Restoration
Contra Costa Water District	East Bay Municipal Utilities District	Santa Clara Valley Water District	North Bay Watershed Association
San Francisco Public Utilities Commission	San Francisco Public Utilities Commission	Contra Costa County Flood Control District	State Coastal Conservancy
Sonoma County Water Agency	Delta Diablo Sanitation District	Zone 7 Water Agency	San Francisco Estuary Project

A.1.2 Functional Areas

The *Water Supply and Water Quality Functional Area* is essentially represented by the Bay Area Water Agencies Coalition (BAWAC). Its members include all the wholesale and large retail water agencies in the Bay Area. Smaller retail water agencies and cities that deliver water are represented by their wholesale agency member of BAWAC. BAWAC selects and gives direction to its CC voting representatives.

The *Wastewater and Recycled Water Functional Area* is represented by the Bay Area Clean Water Agencies (BACWA). BACWA members come from the nine Bay Area counties that surround the San Francisco Bay. BACWA members operate publicly owned treatment works (POTWs) that discharge to the water of San Francisco Bay Estuary. BACWA also selects and gives direction to its CC voting representatives.

The *Flood Protection and Stormwater Management Functional Area* is represented by the Bay Area Flood Protection Agencies Association (BAFPAA). Membership in BAFPAA includes Bay Area counties and special districts with responsibility for flood protection and stormwater management. Of note, BAFPAA is an outgrowth of the Bay Area's IRWM planning process. It, too, selects and gives direction to its CC voting representatives.

The *Watershed Management and Habitat Protection and Restoration Functional Area* enjoys significant leadership on the part of the State Coastal Conservancy and active participation by staff from the San Francisco Bay Regional Water Quality Control Board and the Bay Institute. This Functional Area includes many non-governmental organizations. Some are Bay Area-wide and others represent small creeks and their watersheds and habitats. As indicated above, current voting members of the CC include representatives of the State Coastal Conservancy, the San Francisco Estuary Partnership and the North Bay Watershed Association.

A.1.3 Non-voting Members

The Coordinating Committee (CC) operates through consensus-based decision-making, with voting invoked only if efforts to achieve consensus do not succeed. During the past two years, all decisions have been made through consensus. Often at CC meetings those who are not "voting" members outnumber those who are. These "non-voting" members include: (1) chair and vice chair of the CC, (2) additional individuals representing agencies involved in one or more Functional Area, (3) staff of resources and regulatory agencies, (4) representatives of non-governmental organizations, and (5) individuals representing other interested organizations or simply themselves.

Among those not representing a water resources management agency but yet participating in the CC very actively are representatives of the San Francisco Bay Regional Water Quality Control Board, Association of Bay Area Governments, Bay Area Watershed Network, North Bay Water Reuse Authority, Environmental Water Caucus, Clean Water Action, The Bay Institute and the Sierra Club. Also involved are those representing the Environmental Justice Coalition for Water, U.S. Army Corps of Engineers, Napa County Resource Conservation District, San Francisco Bay Conservation and Development Commission, and League of Women Voters.

Recently, representatives of small regions within the San Francisco Bay Area funding area that have been engaged in their own planning efforts and now participate in the San Francisco Bay Area IRWM Plan, have been attending the CC meetings. These include individuals representing Tomales Bay Watershed Council, Coastside Planning Area and East Contra Costa County. Napa County has been participating actively in the CC for some time. Solano County participates through Bay Area Water Agencies Coalition and now North Bay Watershed Association.

Many of these non-voting members participate as much as voting members in the CC and its related activities. They participate in reaching decisions at CC meetings, serve on subcommittees providing recommendations to the CC, participate in Functional Area and subregion activities, identify and evaluate projects for inclusion in the Plan and for grant applications, assist in drafting documents (including this Work Plan), and participate in various meetings and workshops at the State level.

Section B Region Description

B.1 IRWM Region Boundary

The San Francisco Bay Area IRWM region boundary represents the largest defined contiguous geographic area that maximizes opportunities to integrate water management activities in the Bay Area. The San Francisco Bay Area IRWM region boundary is shown on **Figure 2**. The region boundary is coincident with the ***San Francisco Bay Hydrologic Region*** and ***San Francisco Bay Regional Water Quality Control Board (RWQCB)*** boundary, which are the State boundaries for water management in the San Francisco Bay Area.

Several features of the San Francisco Bay Area make it an appropriate region for integrated regional water management, including:

- **Hydrologic and Ecologic Connection**: The San Francisco Bay Area includes lands that drain to common receiving waters – the San Francisco Bay and the Ocean. Additionally, the Bay estuary and its supporting watersheds host a distinct Bay Area natural environment and ecology that includes many important habitats for species of regional, as well as international, significance.

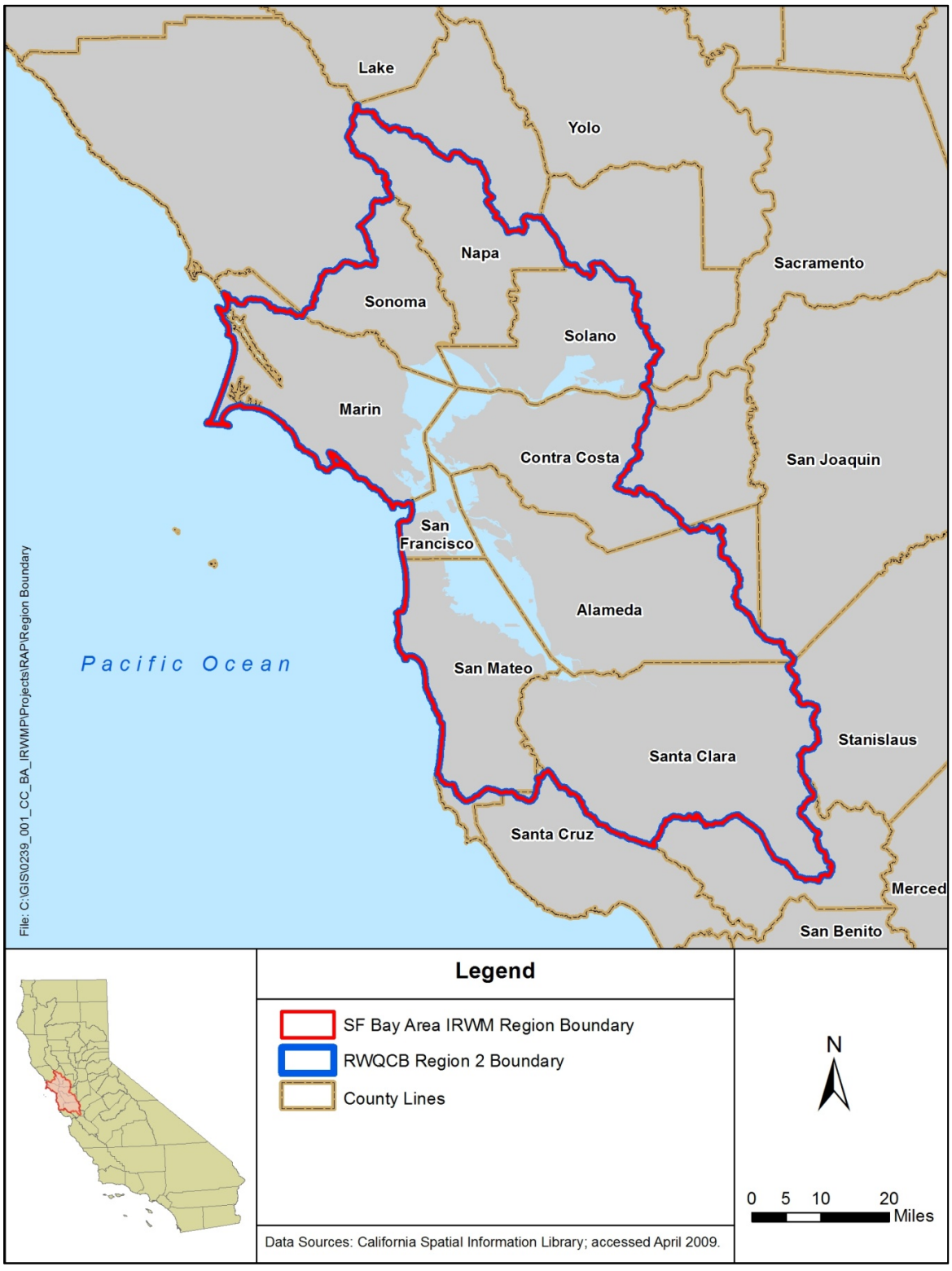
- **Distinctive Identity**: Although parts of the San Francisco Bay Area differ greatly from one another, they are tied together by their connections to the San Francisco Bay, their interdependent economies, and their shared natural resources.

- **History of Regional Planning**: Water management agencies throughout the San Francisco Bay Area have a long history of regional cooperation and planning. Additionally, the Bay Area Air Quality Management District, Metropolitan Transportation Commission, ABAG, Bay Area Rapid Transit, and RWQCB all have regional planning programs/efforts for the Bay Area. The RWQCB and San Francisco Bay Conservation and Development Commission also have regulatory purview over most of the IRWM region.

The San Francisco Bay Area IRWM region boundary was initially conceived to encompass all of the nine counties in the Bay Area. In other words, the region boundary was going to be based on political boundaries. However, the San Francisco Bay Area IRWM Coordinating Committee (CC) realized that portions of many of the counties were more appropriately included in other IRWM regions in other hydrologic regions. Subsequently, the CC envisioned the San Francisco Bay Area region boundary to be coincident with the San Francisco Bay hydrologic region boundary, a watershed-based boundary used by both DWR and the SWRCB/RWQCB for planning purposes.

In addition, as noted above, the Bay Area Air Quality Management District, Metropolitan Transportation Commission, ABAG, Bay Area Rapid Transit have boundaries based on the San Francisco Bay Area region. Thus, the San Francisco Bay Area IRWM region makes sense for long-term water management.

Figure 2: San Francisco Bay Area IRWM Region



B.2 Water, Flood District and Conservation Boundaries

The San Francisco Bay Area IRWM region includes all or part of the service areas of all the water agencies, flood control districts, and wastewater agencies in the San Francisco Bay Area. The boundaries associated with these agencies are described below and shown in Figures 3 through 6. These local agencies conduct the full range of water management activities, including water supply reliability, water quality, flood protection, and environmental stewardship in the Bay Area region. In addition, they work in partnership with watershed groups, and State and Federal agencies.

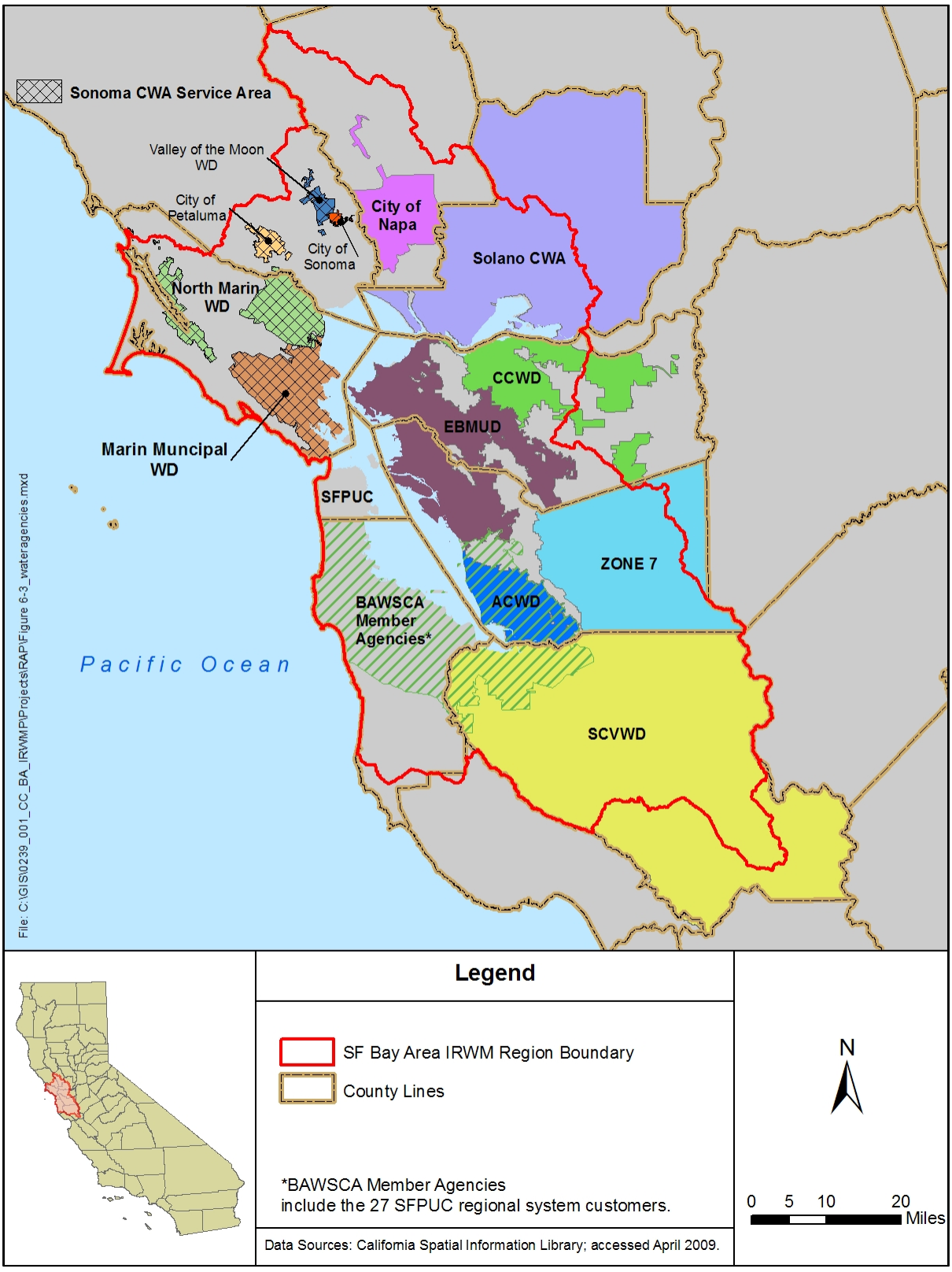
B.2.1 Water Supply Agencies

The water supply agencies shown in **Figure 3** serve the majority of the water demands in the San Francisco Bay Area region. Several of these agencies have service area boundaries that extend outside the region. However, in each case, only the service area within the hydrologic region is included in the San Francisco Bay Area IRWM region. The portions of the service areas outside the San Francisco Bay Area IRWM region boundary are included in other IRWM regions/water management efforts. **Table 2** lists the major drinking water infrastructure in the region:

Table 2: Major Water Transmission Facilities in the San Francisco Bay Area

Water Conveyance Facility	Water Source	Operator	Counties Served	Water Supplied to the Bay Region via facility in 2005
San Felipe Unit of CVP	Delta via San Luis Reservoir	USBR (CVP)	Santa Clara and San Benito Counties	35.6 TAF (4%)
Sonoma and Petaluma Aqueducts	Russian River	SCWA	Sonoma and Marin Counties	30.8 TAF (4%)
North Bay Aqueduct – SWP	Northern Delta	DWR (SWP)	Solano and Napa Counties	40.2 TAF (5%)
Putah South Canal	Lake Berryessa	USBR	Solano County	44.1 TAF (5%)
Contra Costa Canal	Western Delta	CCWD (CVP)	Contra Costa County	59.0 TAF (7%)
South Bay Aqueduct – SWP	Delta	DWR (SWP)	Alameda and Santa Clara Counties	131.8 TAF (16%)
Mokelumne Aqueduct	Mokelumne River	EBMUD	Alameda and Contra Costa Counties	200.6 TAF (25%)
Hetch Hetchy Aqueduct	Tuolumne River	SFPUC	San Francisco, San Mateo, Alameda, and Santa Clara Counties	267.3 TAF (33%)

Figure 3: Water Supply Agencies in the San Francisco Bay Area



B.2.2 Flood Control Districts

The major flood control district boundaries in the San Francisco Bay Area are shown in **Figure 4**. Most of the flood control district boundaries, which are mostly coincident with County boundaries, extend outside the region. All of the flood control districts shown are members of the Bay Area Flood Protection Agencies Association (BAFPAA). Of note, BAFPAA is an outgrowth of the Bay Area's IRWM planning process. The portions of the service areas outside the San Francisco Bay Area IRWM region are in watersheds not draining to the Bay or ocean and are instead included in other IRWM regions/water management efforts.

The Bay Area includes flat and highly developed valleys and bayside alluvial plains surrounded by rainfall-collecting steep terrain. This geography is conducive to sudden flooding. Because of the topography of alluvial plains, floodwaters escaping some stream channels may flow away from the flooding stream, crossing open areas or flowing through city streets until reaching an adjacent watercourse. This type of flooding compounds and exacerbates local flooding that occurs when storm drains and small channel become blocked or surcharged during storms. Flood protection agencies have constructed major flood protection infrastructure projects along the following waterways to reduce the impacts of flooding:

- Alameda Creek
- Corte Madera Creek
- Coyote Creek
- Guadalupe River
- Napa River
- Novato Creek
- Petaluma River
- San Francisquito Creek

B.2.3 Wastewater Management Agencies

Wastewater management agencies in the San Francisco Bay Area IRWM region are numerous and include cities, sanitation districts, community services districts, water agencies, counties, and other local agencies. While not every wastewater management agency actively participates in the IRWM effort, their service areas within the IRWM region are included and many are represented by the Bay Area Clean Water Agencies (BACWA), a joint public powers authority whose members include public utilities that collect and treat municipal wastewater. Further, wastewater management agencies have a long history of working together through BACWA on region-wide wastewater management issues. For example, BACWA led the effort to develop the San Francisco Bay Area Regional Water Recycling Project Master Plan (BARWRP).

Like water supply agencies and flood control districts, wastewater agencies also recognize the value in regional cooperation and collaboration as means of advancing shared interests and resolving common issues. While the individual wastewater agency boundaries did not specifically affect the determination of the regional boundary, the regional boundary was

designed to include the wastewater agencies within the region and subject to regulation by the RWQCB, since wastewater and recycling are major issues in the region.

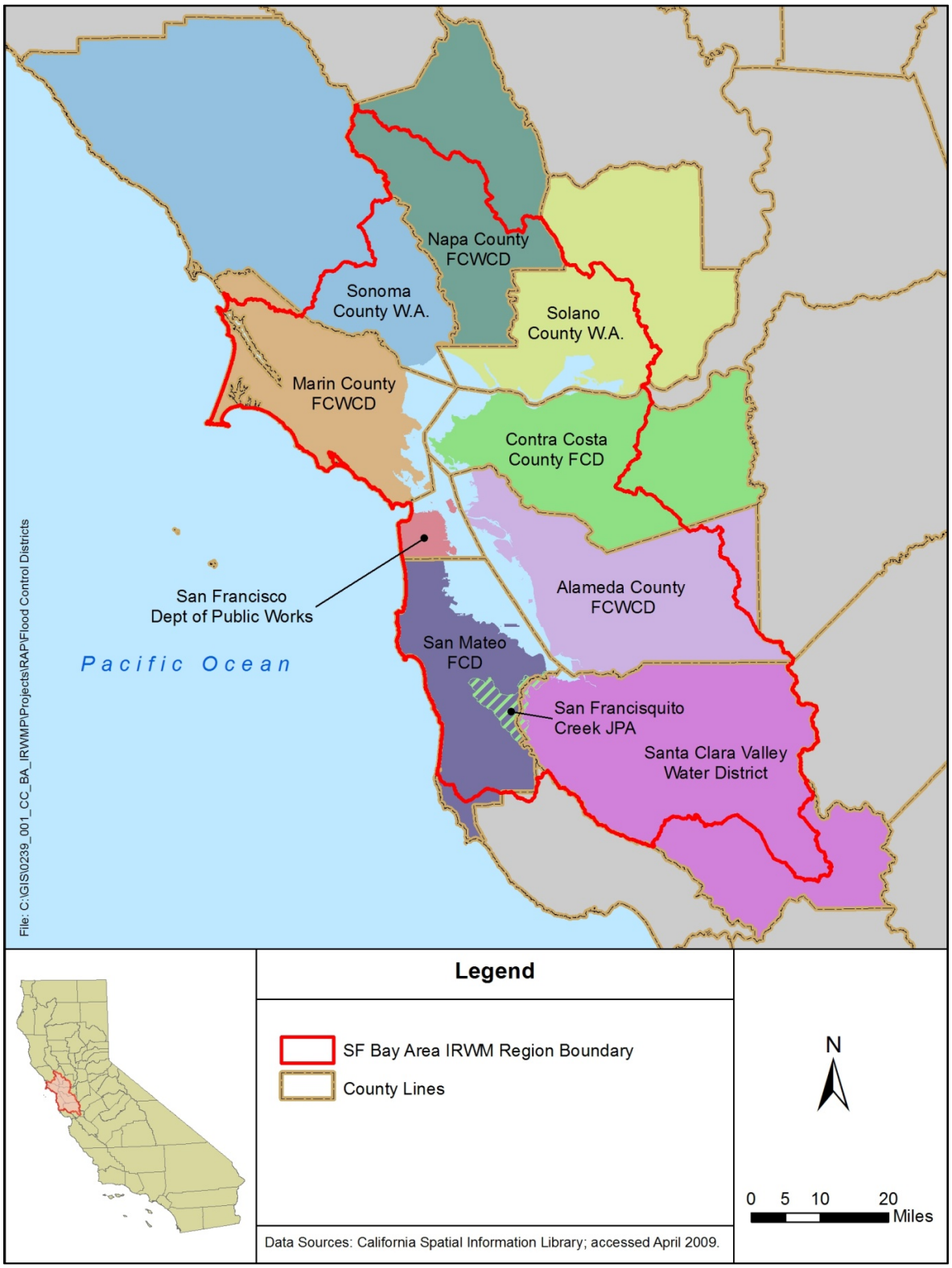
Most of the nine counties that surround the San Francisco Bay and discharge effluent into the Bay are urbanized and sewered. Much of the industrial wastewater produced throughout the region, following pretreatment, is also discharged to publicly owned sewers and subsequently transported to these publicly owned treatment works (POTWs). Each of the 34 POTWs in the San Francisco Bay Area Region has received National Pollution Discharge Elimination System (NPDES) permits from the San Francisco Bay Region of the Regional Water Quality Control Board (RWQCB).

B.2.4 Regional Water and Wastewater Management Organizations

Water management agencies throughout the San Francisco Bay Area have a long history of regional cooperation and planning. Regional water management organizations in the San Francisco Bay Area include:

- **Bay Area Water Agencies Coalition**. BAWAC was formed in 2002 by ACWD, BAWSCA, CCWD, EBMUD, SCVWD, SFPUC, and Zone 7 to address regional water supply and water quality issues. BAWAC membership has since been expanded to include MMWD, Solano CWA, and Sonoma CWA. Regional projects carried out by these agencies include a variety of regional water conservation programs, regional interties, and a subset has been steadily working on studies for a Regional Desalination Project. Prior to 2002 many of these same agencies participating in the CALFED Study entitled, Bay Area Water Quality and Supply Reliability Program, from 1998-2001.
- **Bay Area Clean Water Agencies**. BACWA was formed in 1984. Its members are local governmental agencies involved in urban water resource management and San Francisco Bay water quality stewardship. BACWA's members treat all domestic, commercial and a significant amount of industrial wastewater in the Bay Area. BACWA was formed to foster regional understanding of watershed protection and enhancement for long-term stewardship of the San Francisco Bay Estuary. BACWA served as the fiscal agent for development of the Bay Area Regional Water Recycling Project (BARWRP) Master Plan. Recently, agencies participating in the BARWRP effort were invited to join BACWA's recycled water committee.
- **Bay Area Flood Protection Agencies Association**. BAFPAA was formed in 2007. Its membership includes Bay Area county flood control districts, cities and agencies with flood control and stormwater management responsibilities. BAFPAA receives periodic updates on IRWM Plan activities and provides input to Functional Area representatives.
- **Bay Area Stormwater Management Agencies Association**. BASMAA was formed in 1990 in response to the NPDES permitting program for stormwater. BASMAA encourages regional consistency and efficient use of public resources.
- Additionally, the Bay Area Air Quality Management District, Metropolitan Transportation Commission, ABAG, Bay Area Rapid Transit, and RWQCB all have regional planning programs/efforts for the nine-county Bay Area. The RWQCB and BCDC also have regulatory purview over the same nine counties.

Figure 4: Flood Control Districts in the San Francisco Bay Area



B.2.5 Watershed Management Areas

Within the San Francisco Bay Area IRWM region boundary, some 75 streams, with watersheds ranging from a few square miles to several hundred square miles, drain into San Francisco Bay (including the Carquinez Strait and Suisun Marsh) and the Pacific Ocean. Almost all of these watersheds are entirely contained within the boundary, enabling full integration into water management planning. The exceptions are the Sacramento and San Joaquin Rivers and Delta. They are excluded from the San Francisco Bay Area IRWM region because encompassing them would overly complicate the already complex San Francisco Bay Area IRWM region, and they are included in other IRWM regions and in independent multi-purpose management programs.

It should be noted that the Tomales Bay watershed area is included in the San Francisco Bay Area region. In the past, the Tomales Bay watershed area was covered by the Tomales Bay Watershed Integrated Coastal Water Management Plan. The San Francisco Bay Area IRWM Coordinating Committee (CC) and Tomales Bay Watershed Council agree that combining efforts maximizes opportunities to integrate water management activities and is most consistent with DWR's interest in defining IRWM regions as the largest contiguous geographic area encompassing the service areas of multiple local agencies.

Figure 5 illustrates the 15 largest watersheds and the grouped drainages. For each of the largest watersheds, and for many of the smaller drainages, multi-interest watershed-based groups are working together to address complex water supply, wastewater, flood protection, and habitat issues.

B.2.6 Land Use Agencies

Land use planning in the Bay Area typically takes place through local governments, namely the nine counties and 101 cities and towns of the San Francisco Bay region (**Figure 6**). In addition to these local planning efforts, the following organizations facilitate regional planning in the Bay Area.

Association of Bay Area Governments (ABAG). ABAG is the primary regional land use planning agency for the Bay Area. ABAG strives to enhance cooperation and coordination between local governments to reach regional planning goals. Its members include all nine counties and 101 cities within the Bay Area. As a result, ABAG represents nearly all of the region's population.

Metropolitan Transportation Commission (MTC). MTC was created in 1970 by the state Legislature to be the transportation planning, coordinating and financing agency for the Bay Area. It contributes to regional planning by building consensus and distributing funding for Bay Area Rapid Transit (BART) and other major transit systems.

Joint Policy Committee (JPC). The JPC coordinates the regional planning efforts of ABAG, the Bay Area Air Quality Management District, the Bay Conservation and Development Commission and the Metropolitan Transportation Commission.

Figure 5: DWR Hydrologic Units and Major Watersheds in the San Francisco Bay Area

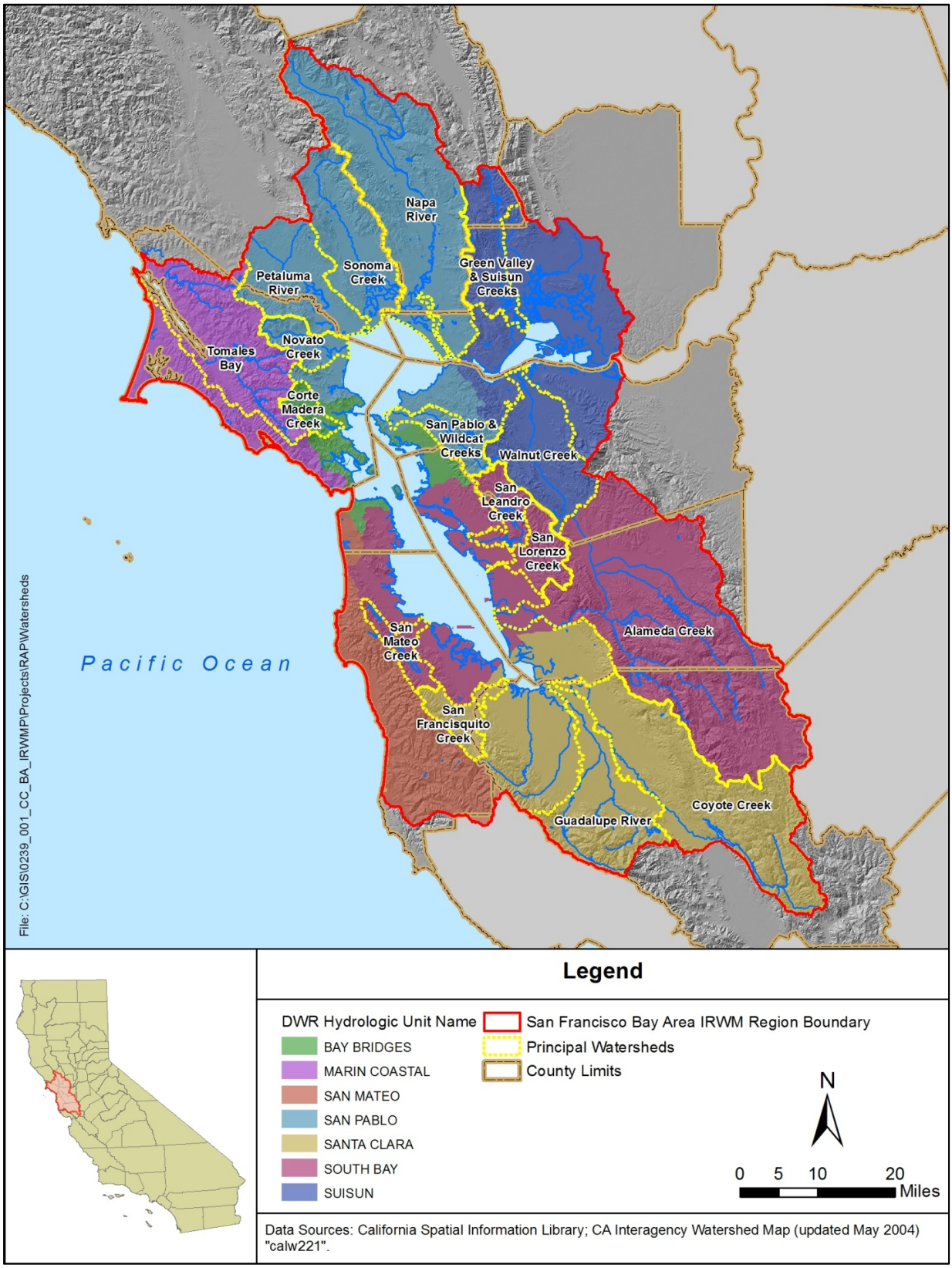
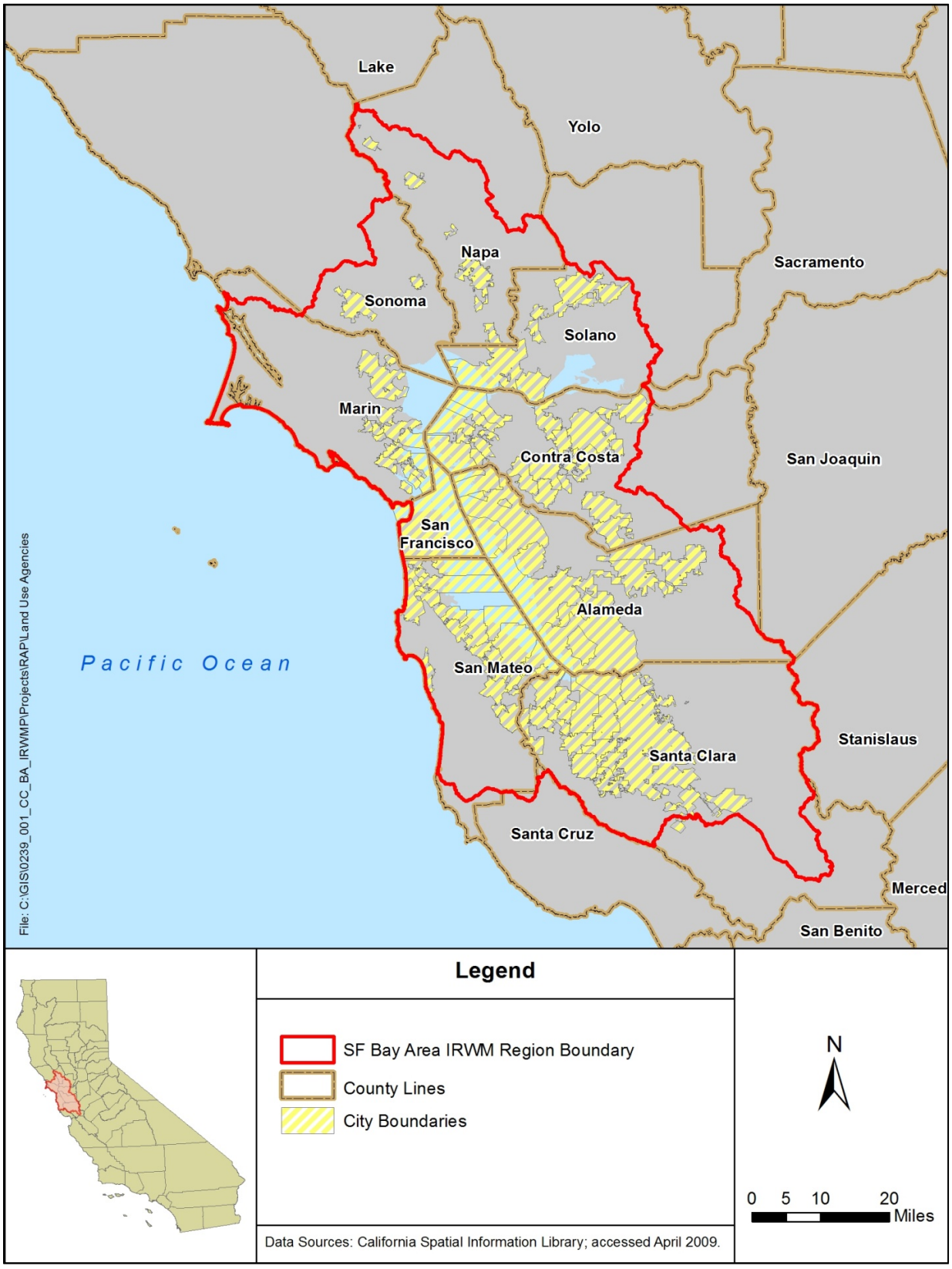


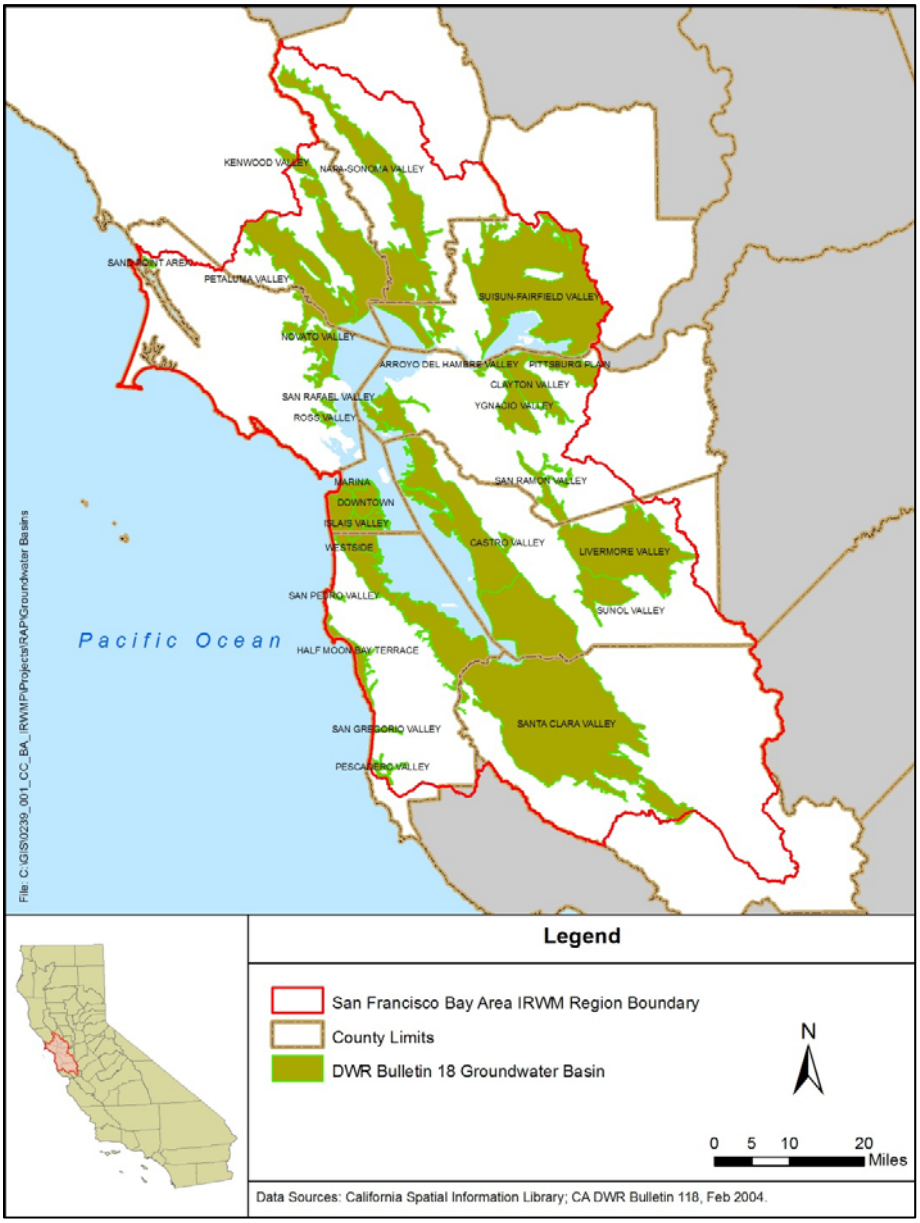
Figure 6: Land Use Jurisdictions in the San Francisco Bay Area



B.3 Groundwater Basins

The San Francisco Bay Area has 28 identified groundwater basins, which underlie approximately 30 percent of the entire region.[1] The groundwater basins in the region are shown in **Figure 7.** More heavily utilized basins include the Santa Clara Valley, Napa-Sonoma Valley, Petaluma Valley, and Livermore Valley basins. Although groundwater is an important source of water supply in some parts of the Bay Area, a clear rationale cannot be provided for basing the Bay Area IRWM region boundary on groundwater basin boundaries since it is not a significant water supply throughout the region.

Figure 7: Groundwater Basins in the San Francisco Bay Area



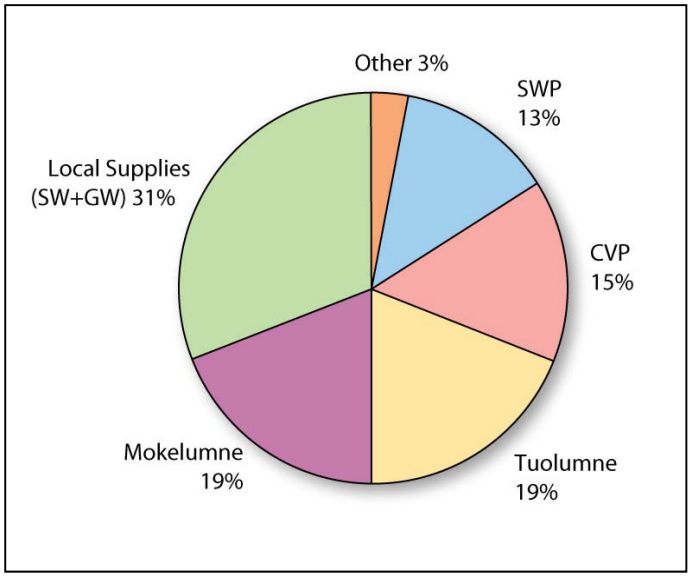
[1] California's Groundwater Bulletin 118 Update 2003

B.4 Bay Area Water Supplies

Bay Area water agencies manage a diverse portfolio of water supplies to meet the needs of the region (**Figure 8**):

Figure 8: Breakdown of Typical San Francisco Bay Area Water Use by Source of Supply

- **Local Supplies:** Local groundwater and surface water supplies
- **Sierra Nevada Supplies:** Tuolumne and Mokelumne River supplies
- **Delta Supplies:** State Water Project (SWP), Central Valley Project (CVP), other delta supplies
- **Other:** Desalination, recycled water, water transfers, and other supplies

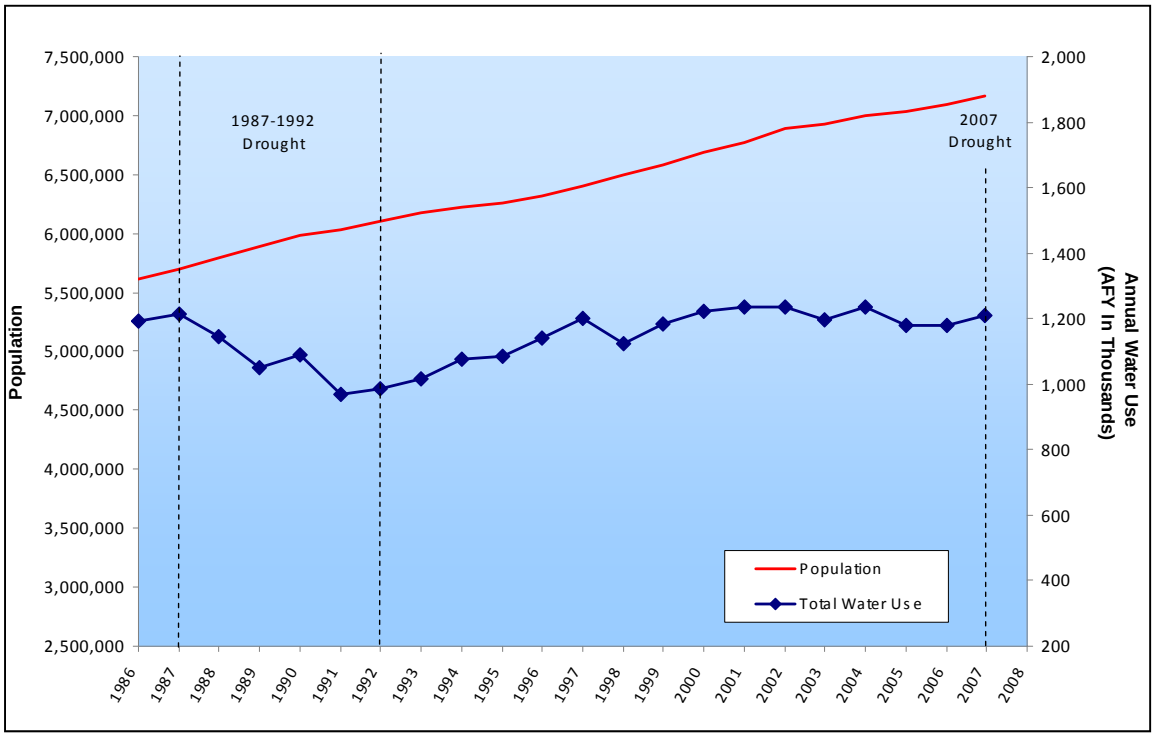


B.4.1 Water Supply and Demand for 20-year Planning Horizon

Although the Bay Area water agencies are all members of the same hydrologic region, water supply and demand characteristics for the Bay Area vary and are unique to each agency due to the following factors:

- **Source of Supply -** Bay Area water agencies rely upon different sources of water supplies to meet their customers' needs as noted above.
- **Bay Area Climate Variations -** There are eleven climatological subregions within the Bay Area with agencies closer to the San Francisco Bay located in cooler climates and higher precipitation than areas further inland, which affects outdoor water use.
- **Population Density -** The population density of the Bay Area also varies greatly from urban, developed San Francisco to more suburban areas in Alameda, Contra Costa and Santa Clara counties. Higher density areas tend to have smaller sections of outdoor landscaping and therefore smaller outdoor water use rates.
- **Type of Users -** Each agency has a unique breakdown of water use by sector. For example, in the CCWD regional service area industrial use is 29 percent of the uses while in the SFPUC retail area only 1 percent of the water is devoted to industrial uses. In addition, districts such as Zone 7 and Solano CWA devote relatively large percentages of water to agriculture compared to other Bay Area agencies.
- **Figure 9** displays the population and water use for the Bay Area. The Bay Area has experienced a significant increase in population with minimal change in total municipal and industrial water use leading to a net reduction in per capita water use over time.

Figure 9: Historical Population and Water Use Trends in the San Francisco Bay Area



In general, demand management strategies responsible for this historic decrease in per capita water use should allow Bay Area water agencies to continue to meet projected demand through 2030 in average years. However, most Bay Area water agencies are projecting future supply shortfalls in dry years. The severity and timing of dry year shortfalls differ greatly among the agencies due to the wide variation of supply sources, types of use, and climates within the region.

B.5 Water Quality

The quality of water supplies used within the Bay Area region varies greatly by source. Mokelumne River and Tuolumne River surface water supplies are of very good quality, with low concentrations of total dissolved solids (TDS), total organic carbon (TOC), chloride, bromide, microbial contaminants, and other water quality parameters. These supplies generally do not exhibit the dramatic seasonal variability observed in Delta supplies. Delta supplies, conversely, exhibit elevated concentrations several water quality parameters including TDS, chloride, bromide, and TOC. Further, Delta supplies exhibit significant variability by location, season, and hydrologic year type. This variability can at times be so severe that some treatment plants must shut down, switch to other supplies sources, or blend with other supplies in order to address the poor water quality. TDS and hardness of groundwater supplies, similarly, vary significantly by basin. Bay Area water agencies are continually striving to address drinking water contaminants of concern (e.g., TDS, TOC, disinfection byproducts, emerging pollutants) through source water protection and advanced treatment strategies.

The water quality of many water bodies continues to be degraded from pollutants discharged from nonpoint sources, and from the cumulative impacts of multiple point sources such as urban runoff. This has led to a decline in the quantity and quality of the biological resources of the Bay. In addition, many of the region's creeks are channelized, culverted, or otherwise geomorphically altered, which has had adverse impacts on aquatic and riparian habitats, sediment transfer, and hydrology.

There are also water quality impacts in the more rural areas of the region from grazing and agriculture, confined animal facilities, onsite sewage systems, and land conversions. Coastal watersheds are impaired due to impacts from sedimentation and habitat degradation.

B.6 Impaired Water Bodies

The San Francisco Bay Regional Water Quality Control Board (RWQCB) classified the San Francisco Bay and many of its tributaries as impaired for various water quality constituents. Impaired stream segments, or water quality limited segments, are included in the Clean Water Act 303(d) list for the San Francisco Bay region.

The RWQCB is currently developing or planning to develop TMDLs to address many of these water quality limited segments. Current TMDL projects in the San Francisco Bay Area are illustrated in **Figure 10**.

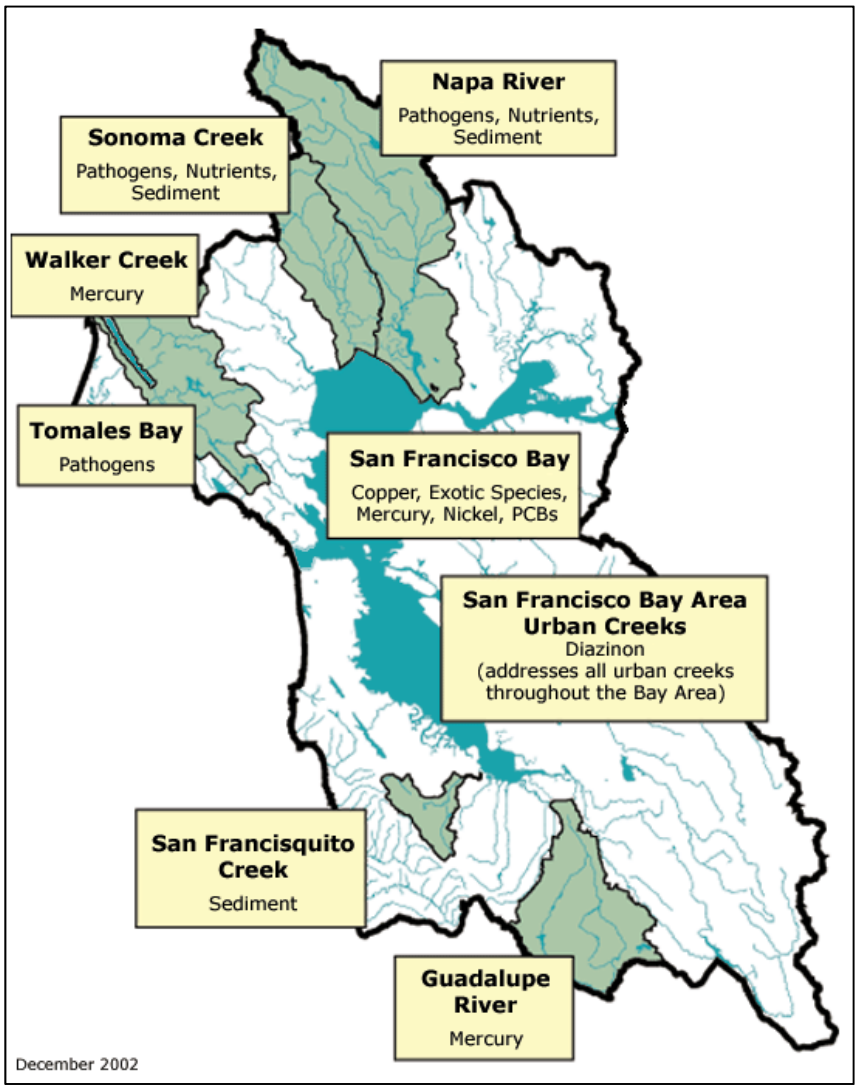


Figure 10: Current TMDL Projects in the San Francisco Bay Area

Source: San Francisco Bay Regional Water Quality Control Board

TMDLs account for all pollutant sources, including discharges from wastewater treatment facilities; runoff from homes, agriculture, and streets or highways; "toxic hot spots"; and deposition from the air. The specific urban runoff BMPs and level of implementation that will be required in TMDLs will be determined through TMDL development. The scale of loading reductions anticipated suggests TMDLs will require significant increases in resources applied to urban runoff control and significant changes in scope and approach to urban runoff control programs.

B.7 Bay Area Ecosystems

The San Francisco Bay Area region is the largest estuary on the west coast of the United States. The system's freshwater streams, tidelands, marshlands, and rivers represent an environmentally sensitive ecosystem of wetlands, mudflats, and farmland that stretches for 700 miles.[2] It provides an important wintering site for migratory waterfowl along the Pacific Flyway, as well as a spawning area for anadromous fish. Bay Area watersheds provide essential riverine, Montane and Valley foothill riparian, lacustrine, freshwater and tidal wetlands, and associated upland habitats.

These habitats are home to more than 100 wildlife species that have been designated by State and federal agencies as threatened or endangered,[3] including Alameda whipsnake, American white pelican, bald eagle, bank swallow, California black rail, California clapper rail, California freshwater shrimp, California least tern, California red-legged frog, California tiger salamander, Chinook salmon, coho salmon, Giant garter snake, salt-marsh common yellowthroat, salt-marsh harvest mouse, San Joaquin kit fox, song sparrow, steelhead trout, Swainson's hawk, western pond turtle, and western snowy plover.

Critical Coastal Areas (CCAs) are specially designated land areas of the California coast where state, federal and local government agencies and other stakeholders have agreed to improve degraded water quality or protect exceptional coastal water quality from the impact or threat of nonpoint source pollution, by coordinating expertise and resources. A total of 21 CCAs in the San Francisco Bay Regional Water Quality Control Board jurisdiction have been designated, and nine of these have been proposed as high priority CCA planning and implementation areas. The National Marine Fisheries Service has also identified salmonid streams in the San Francisco Bay Area (e.g. Pescadero Creek), which will be focus of fisheries restoration efforts.

B.8 Demographics

With a population of 7.09 million, the San Francisco Bay metropolitan region is the second largest in California and the fifth largest in the nation. The San Francisco Bay region's population is made up of approximately 2.58 million households. The annual median household

[2] Save the Bay. 2006. The Sacramento-San Joaquin Delta. Available: http://www.savesfbay.org/site/pp.asp?c=dgKLLSOwEnH&b=993829
[3] NRDC Green Gate. 2006. Endangered and Threatened Species. Accessed January 30, 2006. Available: http://www.nrdc.org/greengate/wildlife/endangeredf.asp. Based on June 2001 U.S. Fish & Wildlife Service Report.

income (MHI) across census tracts in the region currently averages $92,200. **Table 3** lists the key demographic characteristics for the San Francisco Bay Area counties.

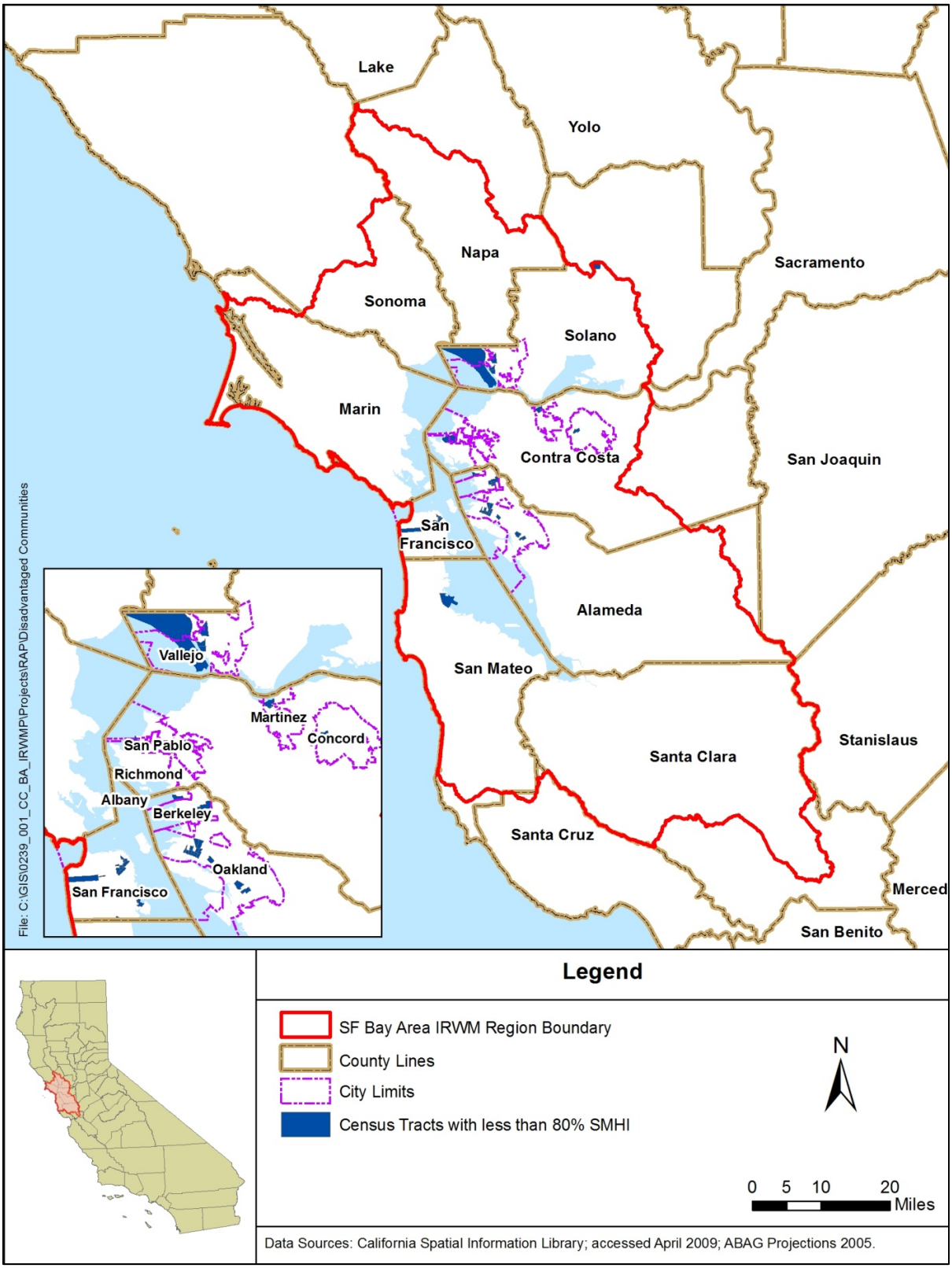
Table 3: Demographic Characteristics for the San Francisco Bay Area

	Existing 2005	Projected 2030	Percent Change
Total Population	7,091,700	8,747,100	23%
Total Households	2,583,001	3,182,220	23%
Residential Acreage	607,311	672,647	11%
Average Residential Density	4.25	4.73	11%
Median Household Income	$ 92,200	$ 115,800	26%

B.8.1 Disadvantaged Communities (DACs)

An understanding of the location of disadvantaged and environmental justice communities can help the region to identify water resources management projects that improve water quality, open space and recreation opportunities, and flooding conditions within these neighborhoods. Department of Water Resources (DWR) defines DACs as communities with an annual median household income that is less than 80 percent of the State-wide annual Median Household Income (MHI), which was $47,493 according to the 2000 US Census (i.e., less than $37,994), and/ or communities with American Indian or Alaskan Native, Asian or Pacific Islander, Black, and/ or Hispanic/ Latino populations exceeding 50% of the total population. **Figure 11** shows the locations of disadvantaged communities in the San Francisco Bay Region (MHI less than 80% of the statewide median). In addition, the Bay Area IRWM Coordinating Committee recognizes that even within DAC communities, there may be populations who may be more severely disadvantaged and may require additional support. The identification of these 'hidden' DACs and assessment of their needs will be addressed in the Work Plan.

Figure 11: Disadvantaged Communities (DACs) in the San Francisco Bay Area



B.9 Neighboring and Overlapping IRWM Regions

The San Francisco Bay Area IRWM Region is adjacent to several IRWM planning regions. The San Francisco Bay Area IRWM Region Coordinating Committee (CC) has contacted and coordinated efforts with water supply, wastewater, flood protection, and watershed and habitat and restoration agencies in adjacent IRWM regions. Agencies are aware of each other's efforts and projects which overlap planning regions have been specifically identified and coordinated. **Figure 12** illustrates neighboring IRWM regions around the San Francisco Bay Area IRWM Region. **Table 4** summarizes the relationships and coordination between the Bay Area IRWM region and its adjacent regions.

As noted in Table 4, the overlaps that have existed in earlier planning activities have been addressed, and all overlapping regions will be collaborating with the Bay Area IRWM Plan group in identifying, developing and prioritizing integrated regional water management strategies and projects in the future. Some planning groups, such as Tomales Bay, will be incorporating all of their activities into the Bay Area plan, and others will conduct planning activities in adjacent regions, but will participate in the Bay Area IRWMP planning processes for projects within the Bay Area. These groups do not plan to maintain separate plans that overlap the Bay Area. Examples of the latter are Napa County agencies and Solano County agencies.

B.9.1 Overlapping Region

The only group that will continue to maintain a regional plan that overlaps in part the Bay Area region is the East Contra Costa County region. This region has been working together for many years, and is a hydrologic unit that straddles two statewide hydrologic regions – the Bay Area hydrologic region and the San Joaquin River hydrologic region. The overlap area (**Figure 13**) contains two watersheds that drain to the east of the Mt. Diablo hydrologic divide (Willow Creek and Kirker Creek). Some entities in the East Contra Costa County region have infrastructure that serves customers in both the Bay Area and the San Joaquin River hydrologic regions, and it makes sense for them to continue to work with their local partners to develop integrated, multiple-benefit approaches to water resources management. This is the only area in the San Francisco Bay Area in which the state-defined hydrologic basins do not match with the organizational and physical infrastructure. Despite this overlap in regional boundaries, the East Contra Costa County group has agreed to conduct all planning and prioritization for projects within its boundaries that are also within the Bay Area regional boundaries in the Bay Area IRWMP group.

Figure 12: Neighboring IRWM Regions

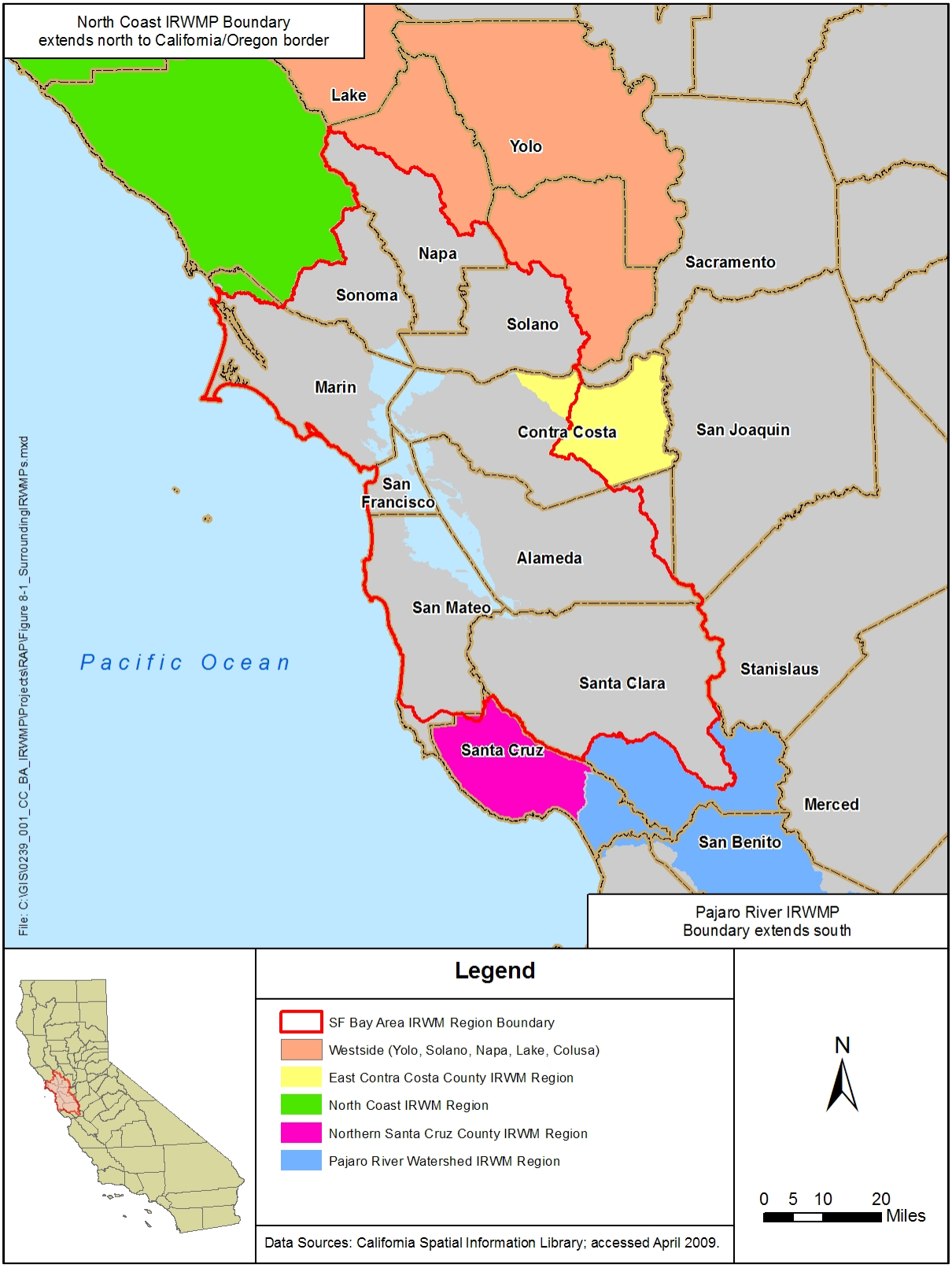
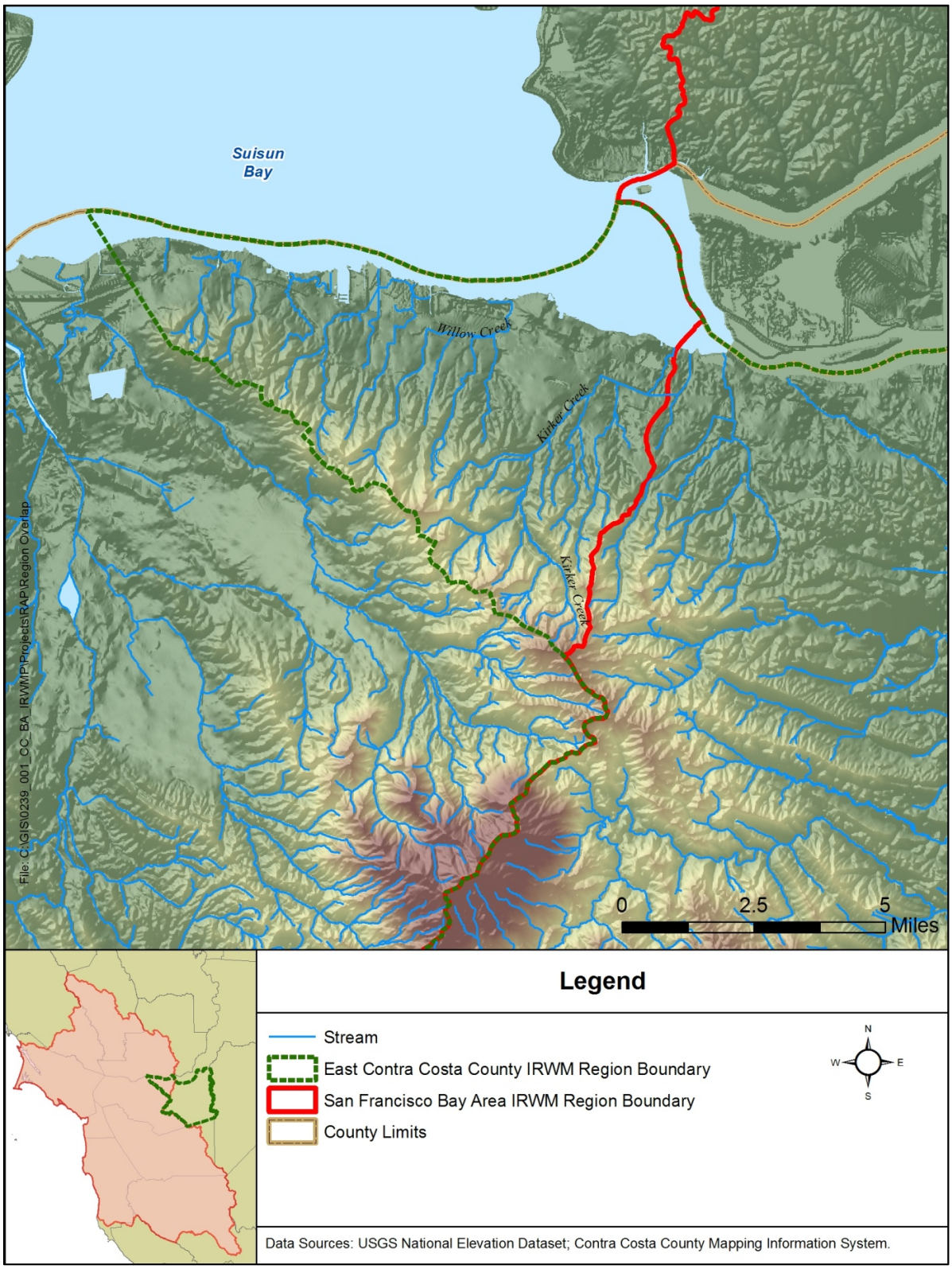


Table 4: Bay Area IRWM Region's Relationships and Coordination with Neighboring IRWM Regions

Funding Area	Adjacent IRWM Planning Region	Relationship
San Francisco Bay Area	Tomales Bay ICWP	Contacted and coordinated with Tomales Bay planning group to resolve overlap area. Tomales Bay had developed an integrated coastal water management plan, and will conduct all future planning activities within the context of the Bay Area IRWM Plan.
San Joaquin River	East Contra Costa County	Contacted and coordinated with East Contra Costa County group to resolve overlap area. The East Contra Costa County group will participate in the Bay Area IRWMP planning and prioritization processes for projects that are within the Bay Area regional boundary. A representative from East Contra Costa County (CCWD) attends the monthly Bay Area Coordinating Committee (CC) meetings.
Sacramento River	Westside (Solano County)	Contacted and coordinated with Solano County Water Agency to resolve overlap areas. Solano County agencies will conduct all planning for projects in the southwestern portion of their region in the Bay Area IRWMP group. The rest of their original region is coordinating with the Sacramento River Funding Area.
Sacramento River	Westside (Napa County)	Contacted and coordinated with Napa County Water Agency to resolve overlap areas. Napa County agencies will conduct all planning for projects in the southwestern portion of their region in the Bay Area IRWMP group. The rest of their original region is coordinating with the Sacramento River Funding Area.
Central Coast	Northern Santa Cruz	Contacted and coordinated with Santa Cruz County to resolve overlap areas and void areas between the Bay Area IRWM region and Northern Santa Cruz Region.
	Pajaro River Watershed	Contacted and coordinated with Pajaro River Watershed IRWMP through Santa Clara Valley Water District (SCVWD), which is part of both the Bay Area IRWM and Pajaro River Watershed IRWM Regions.
North Coast	North Coast	Contacted and coordinated with Humboldt County and Sonoma County Water Agency. Sonoma County Water Agency representatives participate in both regional planning groups, as their service territory overlaps both regions.

Figure 13: San Francisco Bay Area/East Contra Costa County IRWM Region Overlap



This Page Intentionally Left Blank

Section C Description of Existing IRWM Plan

The Bay Area Integrated Regional Water Management (IRWM) Plan was completed and adopted in December 2006. The existing IRWM Plan is consistent with the Proposition 50 Integrated Regional Water Management Grant Program Guidelines jointly issued by the Department of Water Resources (DWR) and the State Water Resources Control Board (SWRCB) on November 18, 2004. The sections included in the IRWM Plan are as follows:

Section A: Regional Water Management Group. This section describes the Bay Area regional water management group, including member agencies and organizations and their management responsibilities related to water.

Section B: Region Description. This section explains why the Bay Area is an appropriate area for integrated regional water management, and describes: internal boundaries within the region, major water-related infrastructure, and major land-use divisions; the quality and quantity of water resources within the region, including surface water, groundwater, reclaimed water, imported water, and desalted water; water supplies and demand for a 20-year planning horizon; important ecological processes and environmental resources; the social and cultural makeup of the regional community; important cultural or social values; and economic conditions and important economic trends.

Section C: Objectives. This section identifies the water resources management challenges facing the region, the common interests that are shared by all Bay Area water resources management entities, and the specific goals and objectives of the IRWMP.

Section D: Water Management Strategies. This section documents the range of water management strategies considered to meet the region's objectives.

Section E: Integration. This section presents the mix of water management strategies selected for inclusion in the Plan and discusses the added value and benefits associated with integrating these strategies.

Section F: Regional Priorities. This section presents short-term and long-term priorities for implementation of the Plan and discusses the process for modifying priorities in response to regional changes.

Section G: Implementation. This section discusses the institutional structure responsible for plan implementation and presents specific actions, projects and studies, ongoing or planned, by which the Plan will be implemented, and identifies the agencies responsible for project implementation.

Section H: Impacts and Benefits. This section presents a screening-level discussion of the impacts and benefits from Plan implementation.

Section I: Technical Analysis and Plan Performance. This section presents the data, technical methods and analysis used in development of the Plan, and discusses performance measures and monitoring systems that will be used to gather performance data and the

adaptive management process that will be used to make adjustments based on the performance.

Section J: Data Management. This section presents mechanisms by which data will be managed and disseminated to stakeholders and the public and discusses how data collection will support statewide data needs.

Section K: Financing. This section identifies beneficiaries of Plan implementation, and identifies the capital and operation and maintenance costs and potential funding sources for each of the projects included in the Plan.

Section L: Statewide Priorities. This section identifies the statewide priorities that will be met or contributed to by implementation of the Plan and specific projects.

Section M: Relation to Local Planning. This section discusses how the IRWM Plan relates to planning documents and programs established by local agencies, and demonstrates coordination with local land-use planning decision-makers.

Section N: Stakeholder Involvement. This section identifies stakeholders included in developing the Plan, the manner in which stakeholders were identified, how they participate in planning and implementation efforts, and how they can influence water management decisions.

Section O: Coordination with State and Federal Agencies. This section discusses State and federal agencies involved with strategies, actions, and projects, and identifies areas where State or other agencies may be able to assist in communication, cooperation, or implementation of Plan components or processes.

Appendix A: Letter of Mutual Understandings
Appendix B: Functional Area Documents
Appendix C: Approach to Integration
Appendix D: Stakeholder List and Outreach Materials
Appendix E: Other Projects Submitted to the IRWMP
Appendix F: IRWMP Comments and Responses
Appendix G: New Projects Added to the IRWMP as of May 24, 2010

Section D Stakeholder Involvement and Public Outreach Process

D.1 Public Process used to Identify Stakeholders

During the development of the IRWM Plan, targeted stakeholder outreach activities involved a diverse group of water supply, water quality, wastewater, stormwater, flood control, watershed, municipal, environmental, and regulatory groups. These outreach activities sought to inform, educate, and engage constituents, stakeholders, and interested parties throughout the nine-county Bay Area.

San Francisco Bay Area IRWM Plan stakeholders were initially identified through the following mechanisms:

D.1.1 Development of Functional Area Documents

Stakeholders were identified during the development of the four Functional Area Documents (FADs) that serve as a baseline to the San Francisco Bay Area IRWM Plan adopted in 2006. The Functional Areas are comprised of Water Supply and Water Quality; Wastewater and Recycled Water; Flood Protection and Stormwater Management; and Watershed Management, Habitat Protection and Restoration. As development of the Plan progressed, additional stakeholders were identified through workshops, local government meetings, the project website and several other forums. The stakeholder database was updated to reflect additional stakeholder groups identified through the IRWM Plan outreach activities.

D.1.2 Development of Local Planning Documents

Stakeholders were also identified from the public involvement process that occurred during the development of the individual agency planning documents used to develop the FADs (e.g., General Plans, Urban Water Management Plans, Water Supply Master Plans, Wastewater Master Plans, Recycled Water Master Plans, Flood Protection Management Plans, Stormwater Management Plans, Watershed Management Plans, etc.)

D.1.3 Development of the IRWM Plan

As part of the development of the IRWM Plan, the following public outreach activities were conducted to identify and include stakeholders in the planning and decision-making process:

- Conducted interviews with IRWM Plan members to obtain their expectations and desires with regards to project outreach, including obtaining their recommendations on the best methods for communicating with their constituencies.
- Created a comprehensive website (http://www.bairwmp.org/) to provide information to the IRWM Plan participants, as well as a broader public audience.
- Four stakeholder workshops were conducted at key milestones during the San Francisco Bay Area IRWM Plan development to ensure a transparent planning process, promote open communication between participating entities and other stakeholders, identify stakeholder concerns, and incorporate stakeholder comments into the San Francisco Bay Area IRWM Plan.

- To facilitate involvement, stakeholder workshops were held immediately following meetings of the Bay Area Water Forum (BAWF), a coalition of Bay Area stakeholders that serves as a monthly venue for participants to discuss a wide range of water issues affecting the Bay Area.
- Stakeholder workshop notices were distributed via e-mail using the San Francisco Bay Area IRWM Plan database consisting of approximately 2,000 contacts.
- Notices were also posted on the San Francisco Bay Area IRWM Plan website and distributed to local newspapers well in advance of the scheduled meeting time.
- Meetings were held in different parts of the Bay Area to encourage participation throughout the region.

D.1.4 IRWM Coordinating Committee (CC) Monthly Meetings

Participation in the San Francisco Bay Area IRWM Plan is open to all stakeholders and members of the public, regardless of their ability to contribute financially to the Plan. All participants are welcome to engage in discussion, share their perspectives, make their interests and viewpoint known, and have their voice heard as part of consensus decision points.

In addition to representatives from water supply, recycled water and wastewater agencies, flood control and stormwater-related agencies, and watershed and habitat protection organizations, regular participants in CC meetings include staff from the Association of Bay Area Governments, regulatory agencies such as the Regional Water Quality Control Board and representatives from non-governmental organizations such as the Bay Institute, Urban Creeks Council, Clean Water Action (an organization representing Disadvantaged Communities), and the Sierra Club. All told, CC meeting participants include a broad and balanced representation of community sectors and environmental and water resources interests.

D.2 Including Stakeholders in the Planning and Decision-making Process for the IRWM Plan

Since the adoption of the IRWM Plan in 2006, the Coordinating Committee (CC) continues to conduct public outreach and public awareness activities to engage stakeholders in the planning and decision-making process. **Table 5** lists the specific outreach activities that have been implemented to involve stakeholders in the IRWM process.

Table 5: Public Outreach Activities since Plan Adoption

Public Outreach Elements	
Website and Email Listserv	• Upgraded website with improved layout that is more user-friendly and easy to maintain. • Developed email list-serv for public members to sign up for Bay Area IRWM Plan news and updates. • Created project submittal templates which were made available on the Bay Area IRWM website.
Public Stakeholder Meetings	• Continued to conduct regular monthly Coordinating Committee (CC) meetings, open to all interested parties who are notified in advance by email and website announcements. • Continued to have an IRWM Plan update on the agenda at every Bay Area Water Forum (BAWF) meeting.
Subcommittees & Associations	• Created the Bay Area Flood Protection Agencies Association (BAFPAA) which is a joint association of flood protection agencies in the Bay Area. • Created two subcommittees (Planning & Process and Project Screening) consisting of various public agency and non-profit representatives to provide recommendations to and support the CC in project solicitation and review processes, and updating existing projects for the Plan update.
Targeted Local Outreach	• Created subregional planning regions and designated subregional lead contacts to facilitate better access to smaller or local organizations (e.g. organize subregionally-based meetings to disseminate information and gather feedback.
Outreach to Disadvantaged Communities (DACs)	• The Coordinating Committee (CC) worked with the San Francisco Estuary Partnership (SFEP) and the Bay Area Watershed Network (BAWN) to identify and recommend a watershed community program for DACs in the Bay Area.

D.2.1 Formation of Sub-regions for Targeted Outreach

Recognizing that the range of water resources management issues and the interests of stakeholders vary greatly across the diverse geographic region of the Bay Area, the Coordinating Committee (CC), with assistance from the Planning and Process subcommittee developed a “subregional” approach to better address the diversity of needs and ideas among the IRWM region. Four subregions have been identified, as shown in **Figure 14**, for the purposes

of improving outreach and coordination by providing better local access to the IRWM process. The success of the subregional approach is anticipated for the following reasons:

- Water resources management agencies have already established relationships within their counties or subregions, and project planning at this scale generally has a greater level of participation by the NGOs – good examples of this are the North Bay Water Association, the Santa Clara Watershed Management Initiative, and others;
- Projects can be better identified from smaller organizations/citizens' groups and DACs whose projects might otherwise not be recognized by a larger regional body;
- The specific manner of integrating a multi-benefit approach into project planning can be more effectively identified and performed at the local and subregional level, rather than across nine counties and multiple watersheds.
- A subregional scale allows for more effective outreach efforts and planning of meeting logistics, and more representatives from DACs and NGOs are expected to be able to participate in planning and prioritization decisions.

Once projects are identified and developed at the local level, greater opportunities to integrate multiple benefits and cross-agency planning into the decision-making process will be available at the subregional level. This process for identifying needs allows for the tracking of trends among the various subregions, so that more comprehensive Bay Area-wide water management issues can be addressed.

Stakeholders who may be better able to engage at the subregional level include:

- Local Governments, including city councils, county supervisors, and public works and planning departments;
- Small, local water, wastewater, stormwater and flood control agencies;
- Non-government organizations, including watershed and conservation groups and community-based organizations;
- Environmental justice and disadvantaged communities.

While the subregional approach will bring new parties into the IRWM process, final decisions concerning IRWMP plans, priorities and funding will continue to occur at the regional level.

D.2.2 IRWM Plan Decision-making Process

The governance structure of the San Francisco Bay Area IRWM region is designed to be flexible and inclusive in its membership, while maintaining a core structure and a clear process for decision-making. A facilitated workshop on Governance for the San Francisco Bay Area IRWM Plan was held in March of 2007, which resulted in agreement to continue with CC oversight of the IRWM Plan and to build on this where possible. The CC includes the chair and vice chair, twelve voting members composed of representatives from the Bay Area's water supply agencies, wastewater agencies, flood control agencies, ecosystem management and restoration agencies, regulatory agencies and nongovernmental organizations, and interested agency

members, stakeholders and members of the public. Participation in the CC is open to all interested parties.

As the overarching governing body for the San Francisco Bay Area IRWM region, the Coordinating Committee (CC) is responsible for making decisions and taking actions including, but not limited to, establishing IRWM Plan goals and objectives, prioritizing projects, financing CC and IRWM Plan activities, implementing Plan activities, making future revisions to the IRWM Plan, hiring and managing consultants, generating grant proposals and managing funding agreements. Planning items requiring decisions (e.g. projects to be added to the IRWM Plan, or projects to be submitted for grant funding) are typically evaluated through the following process shown in **Figure 15**. Stakeholders are involved throughout the process, from initiation of the discussion to the final decision.

Figure 14: Subregions in the San Francisco Bay IRWM Area

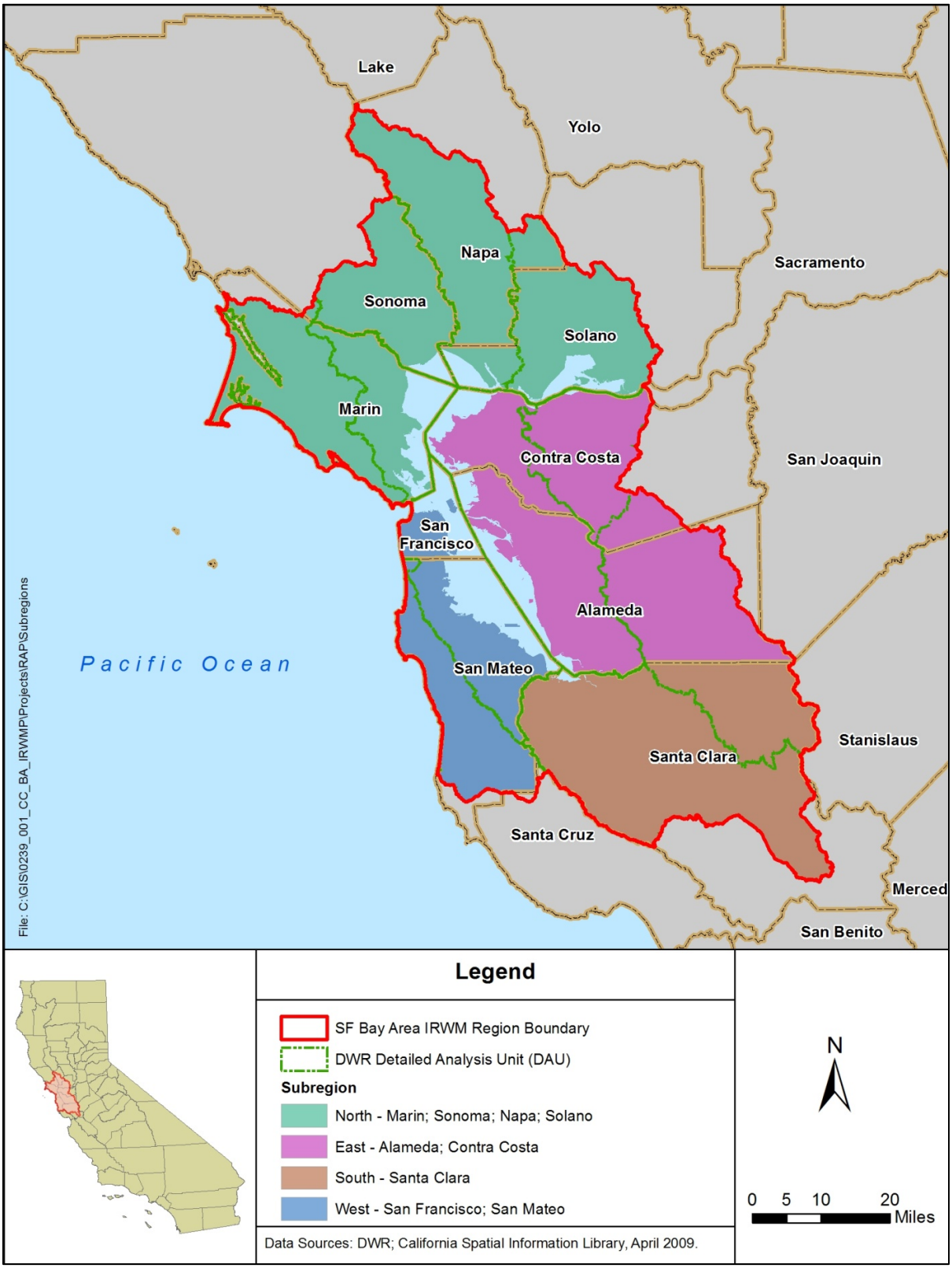
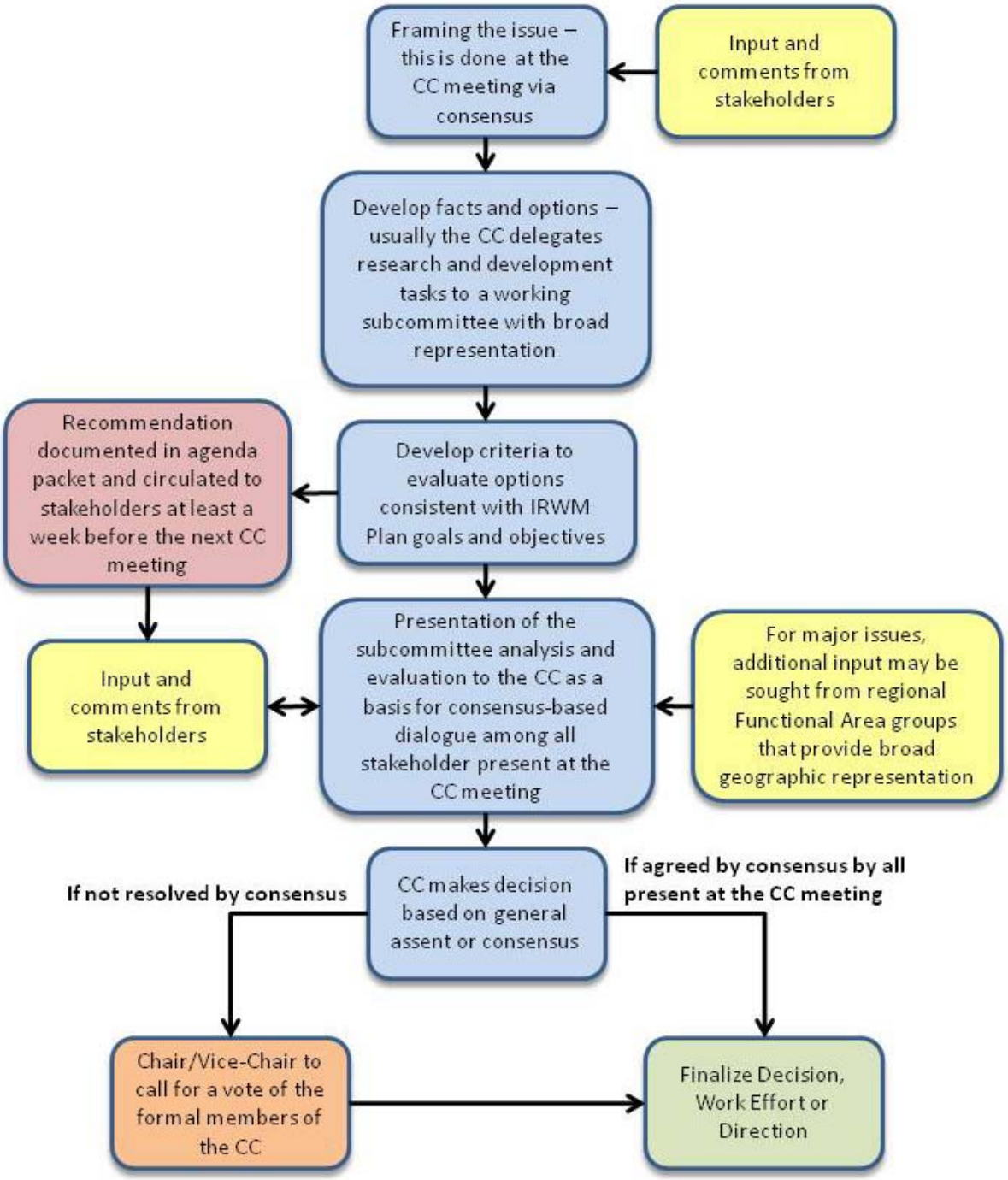


Figure 15: San Francisco Bay Area IRWM Decision-making Process



This Page Intentionally Left Blank

Section E Process used to Identify and Engage Disadvantaged Communities

During the development of the existing IRWM Plan, a spatial analysis was conducted to identify the locations of disadvantaged communities (DACs). A map showing the location of Disadvantaged Communities in the Bay Area was developed (Figure 11) and included in the IRWM Plan to help the region identify water resource management projects that improve water quality, open space and recreational opportunities, and flooding conditions within these neighborhoods.

Disadvantaged Communities and Environmental Justice Groups were provided opportunities to participate in the planning process through IRWM Plan workshops which were held at various locations throughout the Bay Area. Where possible, workshops and other meetings were held near BART and other public transportation routes to make it easier to attend. Documents were made available in hard copy and electronically (through the project website) to facilitate the transfer of information to a variety of interested participants at a reasonable cost.

However, efforts to reach out to disadvantaged communities at the Bay Area- level met with limited initial success. One of the substantial barriers to success identified by representatives of the disadvantaged communities was the lack of staff resources and funding to support the review of documents, travel to Bay Area venues for meetings, and preparation of materials to provide input to the process and IRWM documents. Later in the planning process, the State Coastal Conservancy, through one of its consultants, contracted with the Environmental Justice Coalition for Water (EJCW) to directly engage disadvantaged communities in the Bay Area. The goal was to identify specific projects that could be included in the IRWM Plan and would qualify for grant and other funding. Several of the projects identified made the top tier of projects for which funding would be sought. Perhaps most notable was an education project geared at reducing the exposure of subsistence fishing communities to the dangerous levels of mercury found in San Francisco Bay.

During project solicitation, the Coordinating Committee (CC) has coordinated with watershed-based organizations, for example the San Francisco Estuary Partnership (SFEP) or the Bay Area Watershed Network (BAWN), to identify and develop potential watershed improvement community programs for DACs in the Bay Area.

The CC will continue its commitment to reach out to the variety of potential stakeholders who express an interest in the process, including those who normally do not have much of a voice in planning efforts. From all of the various interactions initiated during the planning process of the IRWM process, a comprehensive list of potential stakeholders was developed from the outset of the Plan development and is continually updated as new stakeholders were identified.
In the Region Acceptance Process, the Coordinating Committee (CC) identified areas to further improve the process of identifying DACs and Native American tribal communities and to engage them in the IRWM planning process. These areas, together with the specific tasks involved, is described in the Work Plan.

This Page Intentionally Left Blank

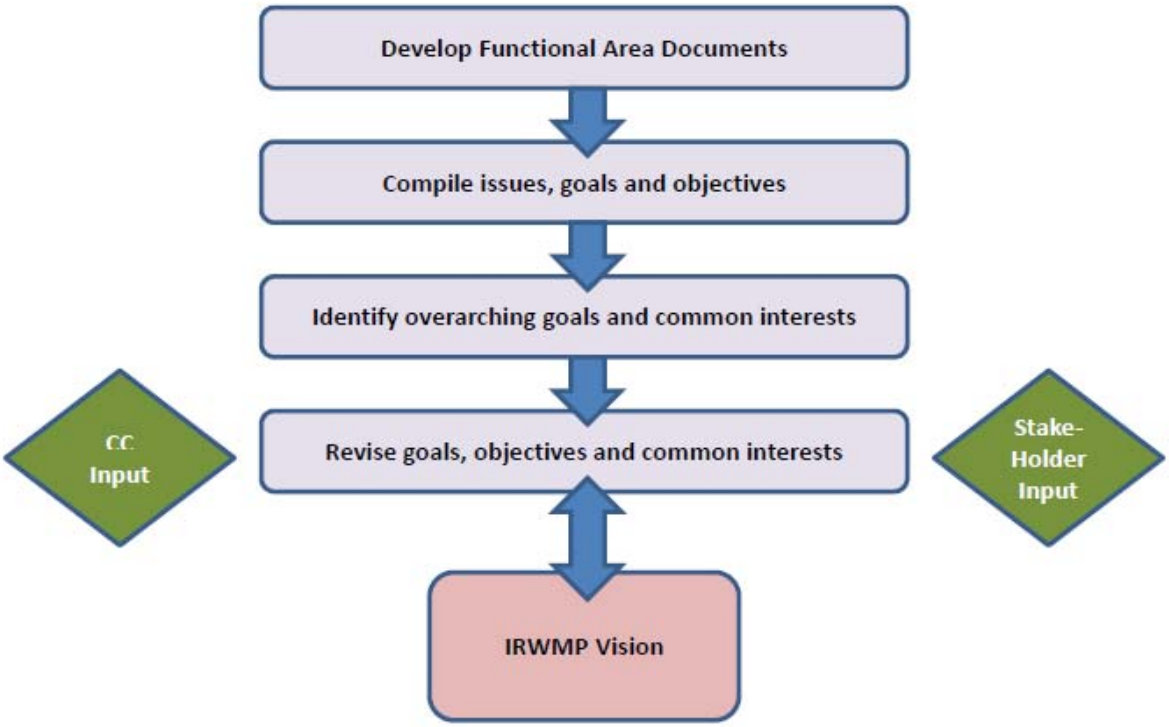
Section F Process used to Identify the Region's Water-related Objectives and Conflicts

The process for developing the vision, goals and objectives in the IRWM Plan is shown in **Figure 16**. The Bay Area IRWM Plan began with the development of Functional Area Documents (FADs) that focused on the following water resources management areas:

- Water Supply and Water Quality (WS-WQ)
- Wastewater and Recycled Water (WW-RW)
- Flood Protection and Stormwater Management (FP-SM)
- Watershed Management, Habitat Protection and Restoration (WM-HP&R)

Regional water resources management goals and objectives were developed for each Functional Area. The process of identifying key goals and objectives was unique to each function area. Each FAD outlines regional goals and objectives for that Functional Area based on geographic integration of established local agency plans, projects and programs.

Figure 16: Schematic of Process Used to Develop the Region's Goals and Objectives



The process of identifying and developing regional goals and common interests that transcend the Functional Areas involved the following steps:

- Compiling the issues, conflicts and challenges from each of the FADs and defining the common water resource management interests.
- Compiling the various goals and objectives identified in each of the FADs to address water management challenges and identifying overarching goals that transcend all function areas of water resource management.
- Revising overarching goals and objectives based on stakeholder input and feedback and developing a vision to guide implementation of the IRWM Plan.

Stakeholder outreach and involvement was critical to this process. Proposed goals and objectives for the Bay Area IRWM Plan were discussed at two Stakeholder Workshops. This open and transparent decision-making process was important to ensure that all perspectives within the region were considered in the IRWM Plan. Additionally, many of the local planning documents that serve as the basis for this IRWM Plan involved extensive stakeholder involvement programs as well.

Identification of overarching goals, objectives and common interests for the Bay Area IRWM Plan assisted in focusing the vision for IRWM Plan implementation. Ongoing refinement of goals, objectives, and common interests helped to clarify desired physical contributions of the IRWM Plan to ongoing planning processes and programs, as well as individual agency missions.

F.1 Definition of the Region's Water Resources Management Conflicts and Challenges

The conflicts and challenges facing the Bay Area were defined based on information from the 2005 California Water Plan Update and information compiled by the four Functional Areas (Water Supply and Water Quality; Wastewater and Recycled Water; Flood Protection and Stormwater Management; and Watershed Management, Habitat Protection & Restoration). These challenges are categorized according to issue areas in the IRWM Plan, and are summarized in **Table 6**.

Table 6: Water Resources Management Conflicts and Challenges facing the Bay Area

Issue Area	Challenge/Conflict
Water Supply	Threats to Baseline Supplies
	Increasing Demands
	Hydrologic Variations
	Infrastructure Vulnerability
Water Quality	Protecting Drinking Water Supplies
	Protecting Receiving Waters
Flood Protection	Permitting
	Floodplain Management
	Stream Ownership and Maintenance
Environmental and Watershed	Environmental Water Demands
	Barriers to Recovery of Special Status Fish
	Development in Floodplains and Riparian Areas
	Channel Alterations and Maintenance
	Recycled Water Quality
	Stream Ownership and Maintenance
Regulatory Compliance	Compliance with Environmental Mandates
	Compliance with Stormwater Requirements
	Compliance with Future Drinking Water Requirements
	Compliance with Future Wastewater Regulations
Financial and Funding	Competing Costs
	Lack of Funding to Maintain or Replace Aging Infrastructure
	Lack of Funding to Comply with Stormwater Permit Obligations
Interagency Coordination	Conflicts between jurisdictional boundaries and natural watershed boundaries and institutional complexities

F.2 Definition of the Region's Common Water Resources Management Interests and Objectives

The next step involved defining common interests related to water resources management among all Bay Area entities, regardless of their role or responsibility in water resources management. These common interests were developed in response to the water resources management challenges identified in the previous section and served as the basis for the development of the region's goals and objectives. Through the IRWM planning process, regional goals were defined that characterize common water resources management interests of entities across Functional Areas and geographic boundaries, both internal and external to IRWM Plan development. The regional goals also reflect the specific objectives set forth in each of the Functional Area Documents (FADs). The specific objectives associated with each regional goal were developed and refined based on input from the Functional Areas, the Coordinating

Committee (CC) and public workshops. **Table 7** provides an overview of the common interests, regional goals and objectives in the existing IRWM Plan.

Table 7: Common Interests, Regional Goals and Objectives in the Bay Area IRWM Region

Common Interests	Regional Goal	Objectives
1) Protecting the Bay Delta Watershed 2) Managing Impacts from an Increasing Population 3) Addressing Aging Infrastructure Needs 4) Maintaining a Vital Economy 5) Protecting Health, Safety and Property 6) Increasing Efficiencies and Value Added through Coordination and Collaboration 7) Protecting Water Resources and Infrastructure	A. Contribute to the promotion of economic, social, and environmental sustainability	Contribute to: ▪ Avoiding, minimizing, and mitigating net impacts to environment ▪ Maintaining and promoting economic and environmental sustainability through sound water resources management practices ▪ Maximizing external support and partnerships ▪ Maximizing ability to get outside funding ▪ Maximizing economies of scale and governmental efficiencies ▪ Providing trails and recreation opportunities ▪ Protecting cultural resources ▪ Increasing community outreach and education for watershed health ▪ Maximizing community involvement and stewardship ▪ Reducing energy use and/or use renewable resources where appropriate ▪ Minimizing solid waste generation/maximize reuse ▪ Engaging public agencies, businesses, and the public in stormwater pollution prevention and watershed management, including decision -making ▪ Achieving community awareness of local flood risks, including potential risks in areas protected by existing projects ▪ Considering and addressing disproportionate community impacts ▪ Balancing needs for all beneficial uses of water ▪ Securing funds to implement solutions
	B. Contribute to improved supply reliability	Contribute to: ▪ Meeting future and dry year demands ▪ Maximizing water use efficiency ▪ Minimizing vulnerability of infrastructure to catastrophes and security breaches ▪ Maximizing control within the Bay Area region ▪ Preserving highest quality supplies for highest use ▪ Protecting against overdraft ▪ Providing for groundwater recharge while maintaining groundwater resources ▪ Increasing opportunities for recycled water use consistent with health and safety ▪ Maintaining a diverse portfolio of water supplies to maximize flexibility ▪ Securing funds to implement solutions
	C. Contribute to the protection and improvement of hydrologic function	Contribute to: ▪ Protecting, restoring, and rehabilitating natural watershed processes ▪ Controlling excessive erosion and managing sedimentation ▪ Maintaining or improving in-stream flow conditions ▪ Improving floodplain connectivity ▪ Preserving land perviousness and infiltration capacity ▪ Securing funds to implement solutions

Common Interests	Regional Goal	Objectives
1) Protecting the Bay Delta Watershed 2) Managing Impacts from an Increasing Population 3) Addressing Aging Infrastructure Needs 4) Maintaining a Vital Economy 5) Protecting Health, Safety and Property 6) Increasing Efficiencies and Value Added through Coordination and Collaboration 7) Protecting Water Resources and Infrastructure	D. Contribute to the protection and improvement of the quality of water resources	Contribute to: ▪ Minimizing point and non-point source pollution ▪ Reducing salinity-related problems ▪ Reducing mass loading of pollutants to surface waters ▪ Minimizing taste and odor problems ▪ Preserving natural stream buffers and floodplains to improve filtration of point and non-point source pollutants ▪ Maintaining health of whole watershed, upland vegetation and land cover to reduce runoff quantity and improve runoff quality ▪ Protecting surface and groundwater resources from pollution and degradation ▪ Anticipating emerging contaminants ▪ Eliminating non-stormwater pollutant discharges to storm drains ▪ Reducing pollutants in runoff to the maximum extent practicable ▪ Periodically evaluating beneficial uses ▪ Continuously improving stormwater pollution prevention methods ▪ Securing funds to implement solutions
	E. Contribute to the protection of public health, safety, and property	Contribute to: ▪ Providing clean, safe, reliable drinking water ▪ Minimizing variability for treatment ▪ Advancing technology through feasibility studies/demonstrations ▪ Meeting promulgated and expected drinking water quality standards ▪ Managing floodplains to reduce flood damages to homes, businesses, schools, and transportation ▪ Minimizing health impacts associated with polluted waterways ▪ Achieving effective floodplain management by encouraging wise use and management of flood-prone areas ▪ Maintaining performance of flood protection and stormwater facilities ▪ Partnering with municipalities to prepare mitigation action plans that reduce flood risks to the community ▪ Coordinating resources and mutual aid between agencies to enhance agency effectiveness ▪ Securing funds to implement solutions
	F. Contribute to the creation, protection, enhancement, and maintenance of environmental resources and habitats	Contribute to: ▪ Providing net benefits to environment ▪ Conserving and restoring habitat for species protection ▪ Acquiring, protecting and/or restoring wetlands, streams, and riparian areas ▪ Enhancing wildlife populations and biodiversity (species richness) ▪ Providing lifecycle support (shelter, reproduction, feeding) ▪ Protecting and recovering fisheries (natural habitat and harvesting) ▪ Protecting wildlife movement/wildlife corridors ▪ Managing pests and invasive species ▪ Recovering at-risk native and special status species ▪ Improving structural complexity (riparian and channel) ▪ Designing and constructing natural flood protection and stormwater facilities ▪ Securing funds to implement solutions

This Page Intentionally Left Blank

Section G Process used to Determine Criteria for Developing Regional Priorities

The Bay Area entities which participated in development of the IRWM Plan established priorities for regional implementation through a collaborative planning process. These priorities distinguished between short- and long-term implementation priorities across four Functional Areas of water management (Water Supply and Water Quality; Wastewater and Recycled Water; Flood Protection and Stormwater Management; and Watershed Management and Habitat Projection & Restoration).

The prioritization process includes both short and long-term priorities for implementation. It is important to note that many of the public agencies and entities participating in the Bay Area IRWM planning process are themselves committed to a host of short-term and long-term priorities that follow the mandate of their organizations. Based on input from public workshops and close coordinating and communication between the entities involved in the development of the IRWM Plan, four main categories of assessment criteria were identified and are described below:

- IRWM Plan Goals
- Bay Area Regional Criteria
- Proposition 50 Program Preferences
- Proposition 50 Statewide Priorities

The IRWM Plan is intended to be a dynamic document that is responsive to changes throughout the region. The assessment criteria included in the existing IRWM Plan include specific criteria targeted to address the Proposition 50 program. As part of the Plan Update, project assessment criteria will be revised and updated to respond to Proposition 84 IRWM Plan Standards. The proposed updates are detailed in the Work Plan in Task 3.

G.1 Existing Assessment Criteria in the IRWM Plan

Bay Area Regional Criteria. The following four regional criteria were found to be important to the Bay Area entities developing the regional IRWMP beyond the stated goals mentioned above. These additional criteria reflect some of the local planning issues particular to the Bay Area, as well as, the priority topics that were identified through the Functional Area analysis.

- *Funding match*. Having a funding match in place generally increases the likelihood that a project will proceed.
- *Regionalism*. The participating entities recognize the importance of highlighting projects that are broad in geographic scope.
- *Partnerships*. As an integrated planning effort, the participating entities determined that the IRWMP should showcase projects with multiple partners.

- *Meets Objectives of Multiple FADs***.** In an effort to identify projects that are truly integrated across Functional Areas, the participating entities have selected to highlight those projects that meet objectives of multiple Functional Area documents.

Proposition 50 Program Preferences. The existing IRWM Plan was developed in accordance with the Proposition 50 IRWM Program, and the participating agencies elected to assess projects in the existing Plan based on their ability to address the following Proposition 50, Chapter 8 Program Preferences:

- Include integrated projects with multiple benefits
- Support and improve local and regional water supply reliability
- Contribute expeditiously and measurably to the long-term attainment and maintenance of water quality standards
- Eliminate or significantly reduce pollution in impaired waters and sensitive habitat areas, including areas of special biological significance
- Include safe drinking water and water quality projects that serve disadvantaged communities

Statewide Priorities. Recognizing the integrated and regional nature of the IRWMP, the participating agencies included the Statewide Priorities set forth in the Prop 50 IRWM Program guidelines as assessment criteria. Specifically, the following Statewide Priorities listed below were used as assessment criteria for Bay Area IRWMP projects and programs in the existing IRWM Plan:

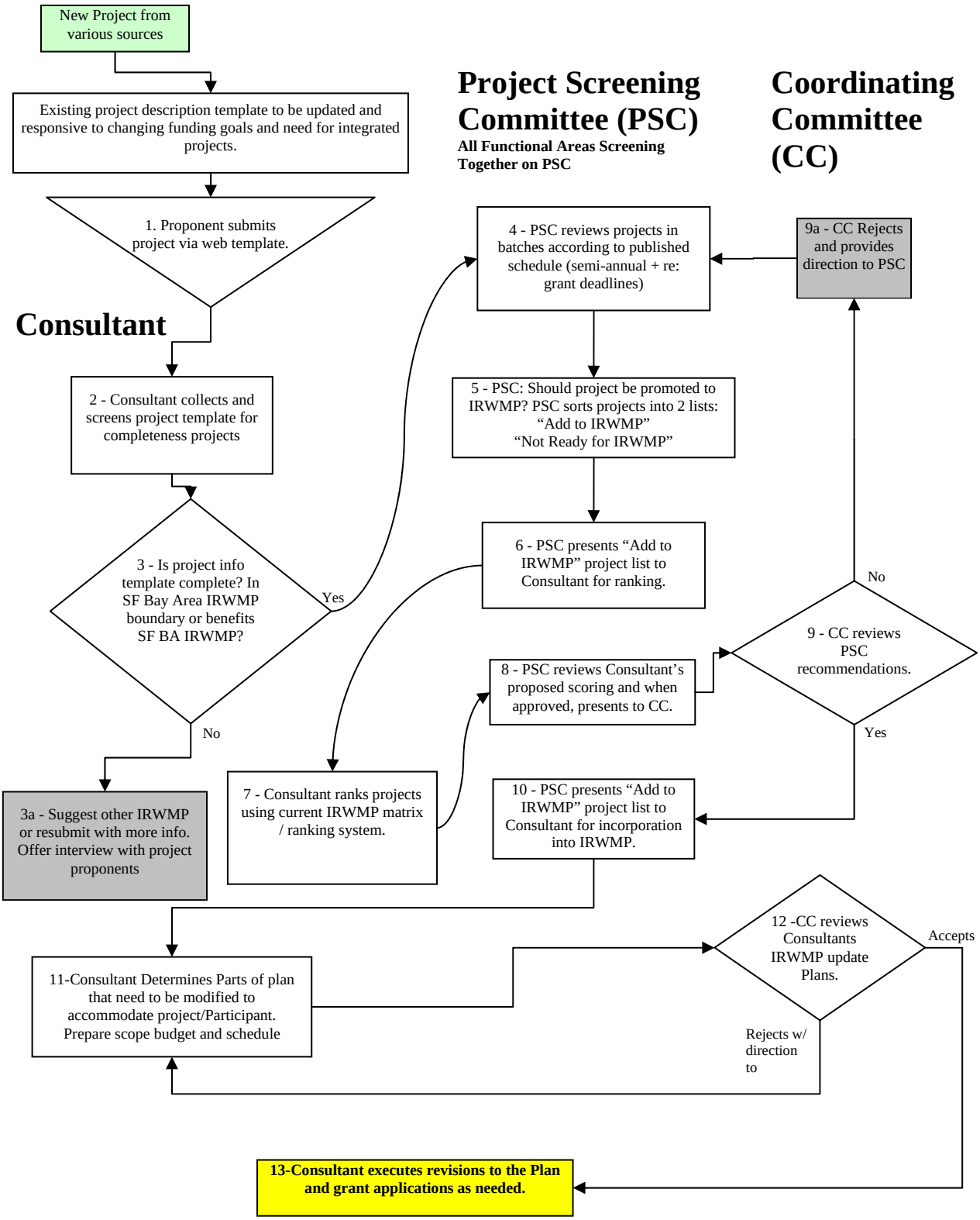
- Reduce conflict between water users or resolve water rights disputes, including interregional water rights issues
- Implementation of Total Maximum Daily Loads that are established or under development
- Implementation of Regional Water Quality Control Board (RWQCB) Watershed Management Initiative Chapters, plans, and policies
- Implementation of the SWRCB's Non-point Source (NPS) Pollution Plan
- Assist in meeting Delta Water Quality Objectives
- Implementation of recommendations of the floodplain management task force, desalination task force, recycling task force, or state species recovery plan
- Address environmental justice concerns
- Assist in achieving one or more goals of the CALFED Bay-Delta Program

G.2 Application of Assessment Criteria to Project Review

The evaluation system in the IRWM Plan emphasizes integrated, multi-benefit, regional projects. In 2007 the Coordinating Committee (CC) endorsed a conversion of this evaluation system (**Figure 17**) into a scoring and ranking system that was used to identify projects for Proposition 50 Round 2 funding. Integrated, multi-benefit projects scored higher using this system. In addition, "Regional" projects were evaluated and opportunities to better integrate regional projects were identified.

The Project Selection subcommittee of the CC developed the Local Project Selection Process for identifying projects to be submitted for Proposition 84 funds. The key components of the process are to establish a consistent priority ranking system for all Bay Area region projects, and to identify regional projects that meet funding cycle emphases and are high priority based on the Bay Area IRWM Plan evaluation system (with any updates). Each Functional Area and the subregions will conduct outreach to identify possible priority regional and local projects; these projects will be reviewed by the Project Screening subcommittee and the CC for integration opportunities and consistency with the IRWM Plan.

Figure 17: Project Review Process

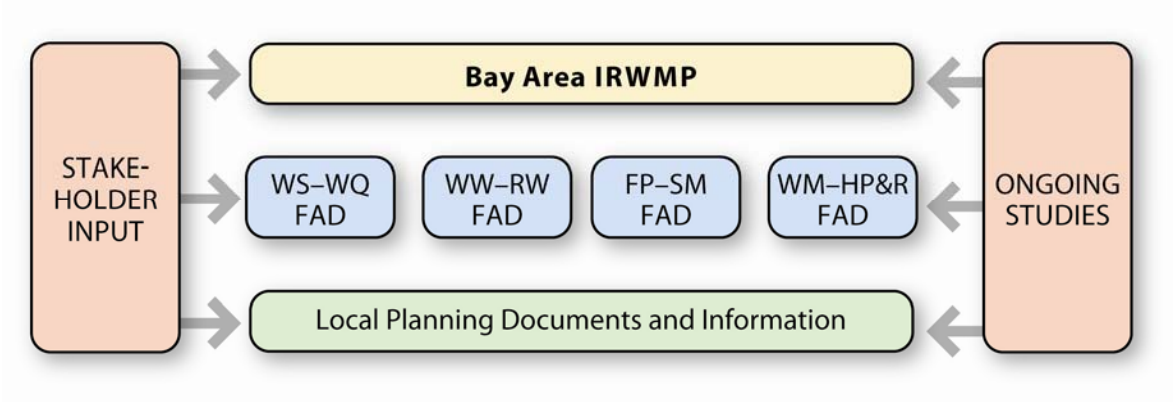


Section H Technical Analysis/Plan Performance and Data Management

H.1 Technical Analysis

Development of the Bay Area IRWM Plan is founded upon the analysis of data provided in the four Functional Area Documents (FADs). **Figure 18** presents the relationship between the IRWM Plan, the FADs, and the foundational local and subregional planning documents and information.

Figure 18: Relationship between the IRWM Plan and Local Planning Documents and Information



In general, within each Functional Area, the Functional Area Documents (FADs) relied on water resources planning and analysis that has occurred at two levels: the local level and the subregional level. The planning and analysis conducted at the local and subregional levels has been used as the basis for analysis performed at the IRWM Plan Level. Each of these geographic planning levels is described below.

- **Local Level.** The "Local Level" refers to water resources planning that is conducted over a relatively limited geographic extent, such as an individual municipality, flood zone, or small/partial watershed. Planning and analysis occurring at the local level frequently serves as the basis for planning and analysis conducted at larger geographic scales.
- **Subregional Level.** The "Subregional Level" refers to water resources planning and analysis that is conducted across a larger geographic scale than the local level, while not encompassing the entire region. Subregional-level planning includes planning across multiple municipalities, large flood zones, or large watersheds. For example, planning conducted by water, wastewater, or flood protection agencies that serve multiple municipalities, or planning conducted by a watershed group addressing an entire large watershed or multiple watersheds would be considered subregional planning. This type of analysis and planning frequently builds upon analyses and plans developed at the local level.
- **IRWM Plan Level.** The "IRWM Plan Level" refers to the water resources planning and analysis being conducted across the entire Bay Area region, such as that being conducted through IRWM Plan development. This type of planning frequently

incorporates and builds upon planning conducted at both the local level and the subregional level.

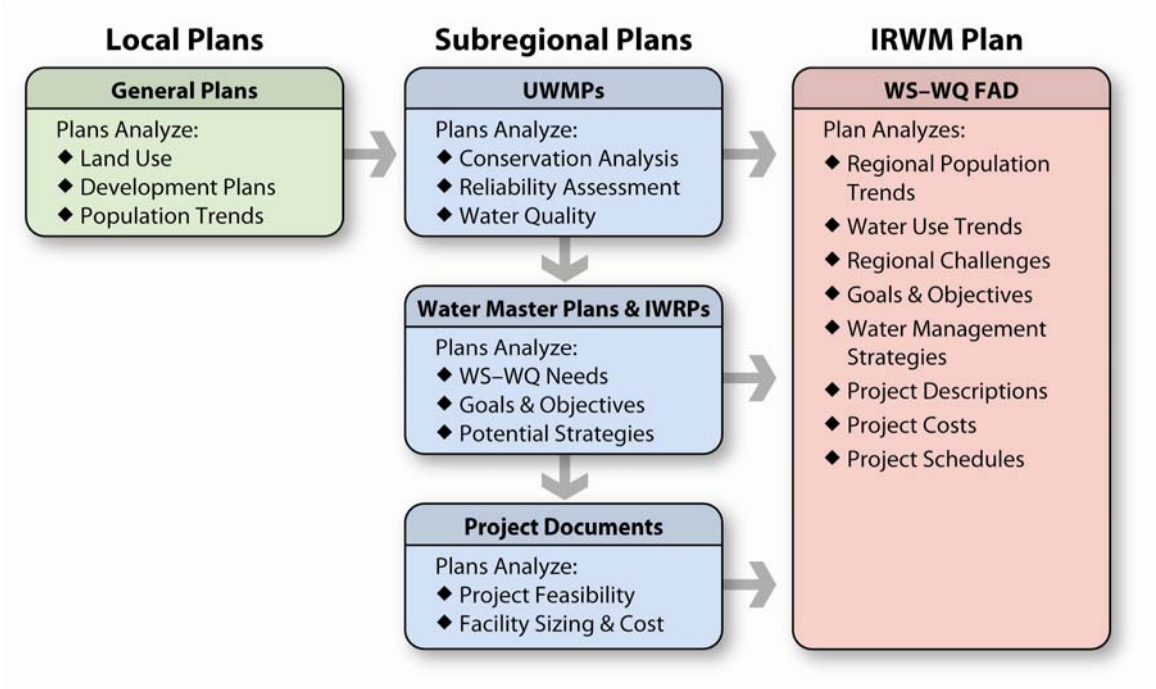
A wide variety of technical studies have been developed at the local level and the subregional level, and have been used in development and support of the Bay Area IRWM Plan. Similarly, many studies are being conducted in parallel with IRWM Plan development. The Bay Area IRWM Plan builds upon these existing documents, plans and programs, coalescing them into a comprehensive plan for water resources management throughout the region.

The following sections describe the relationship between the data and technical analysis included in the IRWM Plan and that developed at the local and subregional level for each of the four Functional Areas. In addition, performance measures and monitoring systems that are currently used in the IRWM Plan to gather performance data at the project- and plan-level are identified. Mechanisms to adapt project operations based on performance data are presented.

H.1.1 Water Supply & Water Quality Data and Analysis

The water supply, demand, and quality information presented in this document reflects the culmination of three distinct levels of analysis, increasing in depth and breadth beginning at the local level and progressing through the subregional level up to the IRWMP level. **Figure 19** presents the relationship between the data and technical analysis included in local plans, subregional plans, and the IRWM Plan.

Figure 19: Relationship between WS-WQ Data and Analysis in Local, Agency and IRWM Plans



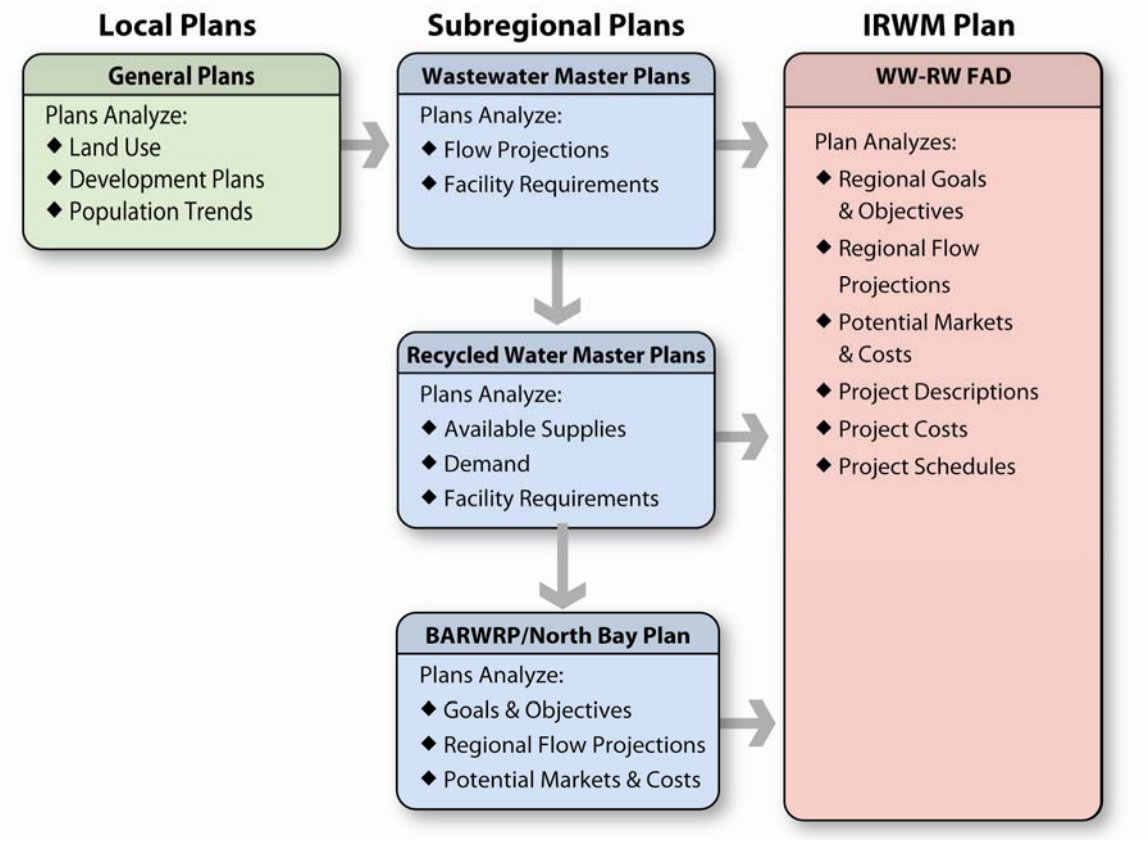
Data and Technical Analysis Performed at the IRWM Plan Level

The IRWM Plan was built upon information and technical analysis developed at the local and subregional levels through development of the Water Supply and Water Quality Functional Area Document (FAD). Information sources for the FAD included Urban Water Management Plans prepared by water suppliers at the subregional level, Water Supply Management Programs, Water System Improvement Plans, and Integrated Water Resources Plans (IWRPs). The WS-WQ FAD compiled information from UWMPs to develop regional population and water use trends. The other plans were used to identify regional issues, goals and objectives for the Bay Area IRWM region. Lastly, the information developed in the project-specific plans served as the foundation for development of IRWM Plan projects and programs.

H.1.2 Wastewater & Recycled Water Data and Analysis

The Wastewater & Recycled Water Functional Area Document similarly builds upon data and analyses developed at the local level. **Figure 20** presents the relationship between the data and technical analysis included in local plans, regional plans, and the IRWM Plan.

Figure 20: Relationship between WW-RW Data and Analysis in Local, Regional and IRWM Plans



Data and Technical Analysis Performed at the IRWM Plan Level

The IRWM Plan was built upon information and technical analysis developed at the local and subregional levels through development of the Wastewater and Recycled Water Functional Area Document (FAD). Information sources for the FAD included Wastewater Master Plans, Recycled Water Master Plans, as well as two regional recycled water studies: The Bay Area Regional Water Recycling Program (BARWRP) and the North Bay Water Reuse Program (NBWRP). The BARWRP study was developed based on the flow projections presented in the subregional Wastewater Master Plans and Recycled Water Master Plans to develop regional issues, goal and objectives, regional flow projections, and potential recycled water markets and associated costs. The NBWRP study identified current and future available wastewater supplies for recycled water production to increase water supply and reduce discharges to the North Bay. The WW-RW FAD updated and expanded upon these two subregional studies through an extensive review of recycled water feasibility studies, plans and programs throughout the region, and identified a suite of regional, multi-benefit projects for implementation that would best address the goals and objectives of the WW-RW Functional Area.

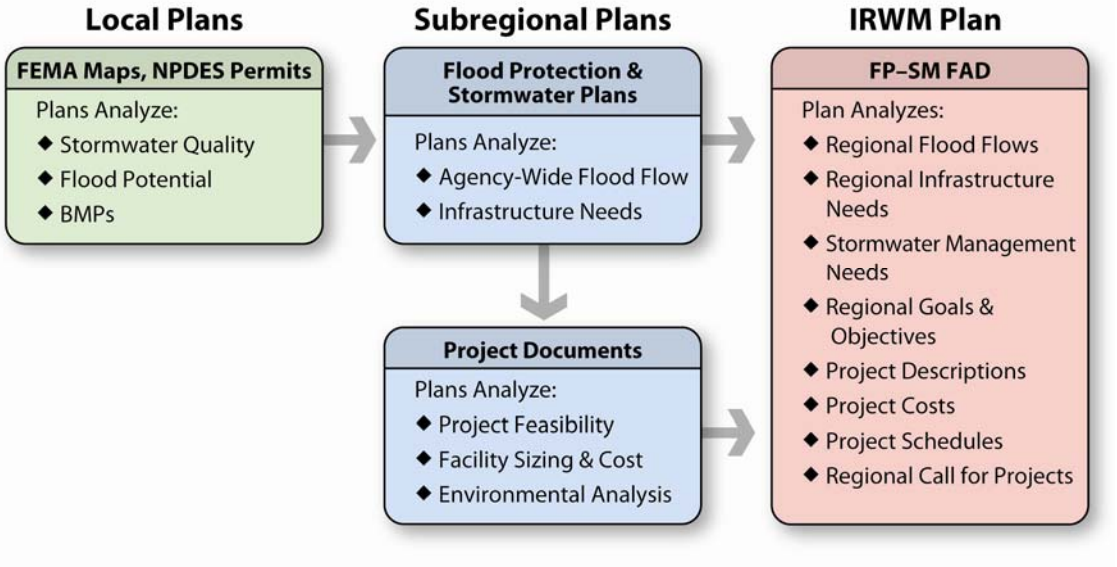
H.1.3 Flood Protection & Stormwater Management Data and Analysis

The Flood Protection & Stormwater Management (FP-SM) FAD was prepared through consultation with the six major agencies with subregional flood protection responsibilities. In addition, several Bay Area municipalities with stormwater jurisdiction and the Bay Area Stormwater Management Agencies Association (BASMAA) assisted where possible. The agencies met frequently to direct the development of the FP-SM FAD, which builds upon the local work being conducted by the participating flood protection and stormwater management agencies and municipalities to characterize flood protection and stormwater management conditions throughout the region. **Figure 21** presents the relationship between the data and technical analysis included in local plans, regional plans, and the IRWM Plan.

Data and Technical Analysis Performed at the IRWM Plan Level

The IRWM Plan was built upon information and technical analysis developed at the local and subregional levels through development of the Flood Protection and Stormwater Management Functional Area Document (FAD). Information sources for the FAD included localized data such as FEMA Flood Insurance Rate maps, broader scale flood protection and stormwater management plans and BMP implementation programs, as well as project planning documents who include detailed feasibility, design and cost information for the development of flood protection and stormwater management infrastructure. The FP-SM FAD compiled information from these various documents to develop an understanding of regional flooding characteristics, and regional stormwater issues. From this analysis, regional issues, goals and objectives were developed in the FAD.

Figure 21: Relationship between FP-SM Data and Analysis in Local, Regional and IRWM Plans

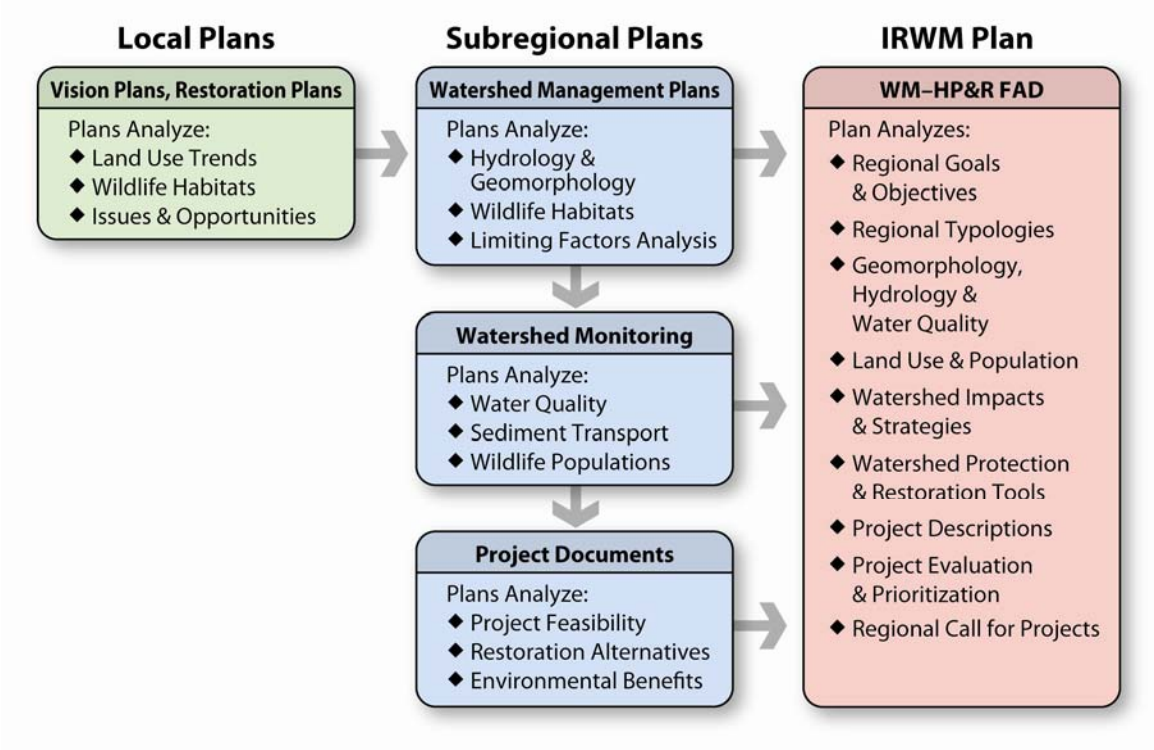


In addition, local- and subregional-level projects being considered to enhance flood protection and stormwater management throughout the region were considered in the context of the greater regional challenges and FP-SM goals and objectives to identify selected projects for integration into the IRWM Plan. An open call for flood protection and stormwater management projects was distributed to a varied group of agencies and municipalities throughout the region to expand the base of projects being considered for regional implementation. In addition, the FP-SM Functional Area held biweekly meetings through which additional projects were identified to most effectively address the regional goals and objectives developed for the region.

H.1.4 Watershed Management & Habitat Restoration and Protection Data and Analysis

Watershed Management & Habitat Protection and Restoration data and analysis begins at the local watershed level, and is further developed at the subregional and IRWM Plan level. **Figure 22** presents the relationship between the data and technical analysis included in local plans, subregional plans, and the IRWM Plan.

Figure 22: Relationship between WM-HP&R Data and Analysis in Local, Regional, and IRWM Plans



Data and Technical Analysis Performed at the IRWM Plan Level

The IRWM Plan was built upon information and technical analysis developed at the local and subregional levels through development of the Watershed Management and Habitat Protection and Restoration Functional Area Document (FAD). Information sources for the FAD included existing watershed and habitat planning documents. Nearly 40 planning documents were reviewed and cataloged from around the San Francisco Bay Area. Review of these planning documents provided an overview of the management goals and objectives used by Bay Area resource managers to protect sensitive habitats. This regional plan review helped the Watershed Plan Development Committee (WPDC) to understand the key watershed management issues facing the Bay Area, and served as a basis for development of goals and objectives in the Bay Area Watershed Plan. Additionally, the FAD was developed based on a review of academic literature related to watershed management, habitat protection, and restoration concerns.

The WM-HP&R FAD presented a characterization of the Bay Area's largest watersheds within the Region 2 boundaries. GIS maps created for each watershed characterization include: physical setting (topography, physiology, hydrology), landslide hazard, biological resources (vegetation cover), land use setting (land use, roads), and water resources setting (flood hazard zones, groundwater basins). Basic descriptions of the physical, biological, hydrologic, geomorphic, and land use settings for each watershed are compiled into characteristics tables. A list of key watershed issues and opportunities was developed for each watershed, based upon outreach and communication with watershed representatives. In addition to outreach, the GIS and planning document reviews were used to identify additional issues and

opportunities. The FAD contains a description of the major impacts and strategies used in watershed protection and restoration across the Bay Area, as well as discussion of the tools available to support project development.

The WM-HP&R FAD was developed through a regional collaborative input process. An open call for watershed projects was distributed to a broad array of agencies, districts, coalitions, NGOs, and community groups to expand upon the project information identified in existing and ongoing planning document.

H.2 Plan Performance Assessment

Bay Area IRWM Plan performance is assessed at three levels: the project level, the Functional Area level, and the IRWM Plan level. The Bay Area IRWM Plan is framed around regional goals and objectives that all contribute to the overall vision of sustainable water resources management within the Bay Area (see Section B.4.2). Assessment of plan performance is necessary to evaluate how effectively the Plan is achieving these regional goals and objectives. Progress toward achieving these objectives or the need to modify priorities in response to regional changes will be assessed periodically, pending availability of funding. **Table 8** summarizes the types of evaluation that are undertaken as part of IRWM Plan implementation and assessment.

Table 8: IRWM Plan Assessment Activities

Responsible Party	Assessment Task	Frequency
Project Proponents	• *If funded*, project proponents will be required to monitor and report on project status and progress towards achieving stated goals • *If not funded*, project proponents would be encouraged to monitor and report on project progress	• Quarterly Basis
Water Supply-Water Quality (WS-WQ) Functional Area	• Collect project performance information collected by proponents of WS-WQ projects • Collect regional water use and population information • Assess functional area performance in meeting goals and objectives • Adjust functional area priorities as needed	• Annual Basis
Wastewater-Recycled Water (WW-RW) Functional Area	• Collect project performance information collected by proponents of WW-RW projects • Collect information on recycled water use throughout the region • Assess functional area performance in meeting goals and objectives • Adjust functional area priorities as needed	• Annual Basis
FP-SM Functional Area	• Collect project performance information collected by proponents of FP-SM projects • Collect information on number of acres within FEMA flood zone and number of floods and reported damages throughout region • Assess functional area performance in meeting goals and objectives • Adjust functional area priorities as needed	• Annual Basis
HP-WM&R Functional Area	• Collect and compile project performance information collected by proponents of HP-WM&R projects • Assess functional area performance in meeting goals and objectives • Adjust functional area priorities as needed	• Annual Basis
IRWM Coordinating Committee (CC)	• Collect information gathered by Functional Areas • Assess IRWMP performance in contributing to regional goals, objectives, and IRWMP vision • Adjust IRWMP as needed	• Periodically, pending availability of funding

The methods that are currently used in assessing plan performance at each of the three levels are described below.

H.2.1 Project-Level Assessment

As part of the IRWM Plan performance assessment, the projects identified for regional implementation are assessed to evaluate their performance with respect to stated performance measures. Assuming adequate funding and resources are available, the agencies

identified as proponents of priority projects are responsible for implementing the project as well as project-specific monitoring strategies. Project proponents are responsible for collecting project information, including project implementation status, throughout implementation. In addition, the project proponents will assess project performance with respect to the stated performance metrics for the project on a quarterly basis, or as dictated by the reporting requirements associated with the funding source. Projects that are included in the IRWM Plan, but are not funded are encouraged to follow a similar monitoring and reporting plan. If adequate funding and resources are available, these individual project monitoring reports will be submitted to the appropriate Functional Area to facilitate the annual functional area performance assessment.

Metrics were developed to measure implementation performance for each project in the IRWM Plan. These metrics are intended to serve as measurable benchmarks for establishing success of projects following implementation. As projects become further developed, these metrics may evolve to better capture the performance of projects with respect to meeting project objectives.

H.2.2 Functional Area-Level Assessment

As described above, the responsibility for assessing project performance with respect to performance measures lies with project proponents. This information is provided to the appropriate Functional Areas. In addition to serving as a clearinghouse for project-specific information generated throughout project implementation, and assuming adequate funding and resources are available, the Functional Areas are responsible for collecting regional data to be used in assessing progress toward achievement of the Functional Area's goals and objectives. The Functional Areas collect the following data on an annual basis:

- **WS-WQ Functional Area**: regional water use and population information
- **WW-RW Functional Area**: recycled water use throughout the region
- **FP-SM Functional Area**: number of acres within FEMA flood zone and number of floods and reported damages throughout region
- **HP-WM&R Functional Area**: to be determined in the Plan update

This information will be used in conjunction with the project-specific performance data to recommend adjustments to Functional Area priorities as needed. The information collected through these efforts will be provided to the overall IRWM Plan Coordinating Committee (CC) to be used in assessing Plan performance.

H.2.3 Plan-Level Assessment

The existing IRWM Plan indicates that the Plan-level assessment will be led by the IRWM Coordinating Committee (CC). The CC is responsible for collecting information gathered by the Functional Areas to assess IRWM Plan performance in terms of contribution to regional goals, objectives, and IRWM Plan vision. Based on the results of this assessment, the IRWM Plan will be adjusted as needed. In addition to using the data collected through the efforts described

above, there are a variety of ongoing monitoring programs currently in place in the Bay Area that the CC may leverage to support the assessment. **Table 9** lists several of the existing Bay Area monitoring resources that may be used in support of the Plan-level assessment. Note that Table 9 is not an exhaustive list of resources and the CC will be reviewing and updating the list as part of the process for updating the IRWM Plan.

Table 9: Existing Bay Area Monitoring Resources

Functional Area	Monitoring Resources
Water Supply and Water Quality (WS-WQ)	• Urban Water Management Plans (UWMP) • Water Supply Master Plans, Integrated Resource Plans, Capital Improvement Plans • Watershed Sanitary Surveys • Drinking Water Source Assessment and Protection Program (DWSAP) • Groundwater Ambient Monitoring and Assessment Program (GAMA) • Groundwater Management Plans • California Data Exchange Center (CDEC) • DWR Water Data Library and other DWR resources • Source and treated water quality monitoring reports by agencies
Wastewater and Recycled Water (WW-RW)	• NPDES, Waste Discharge Requirements • Wastewater Master Plans, Recycled Water Master Plans, Strategic Plans, Capital Improvement Plans • Wastewater management agency/district annual reports
Flood Protection and Stormwater Management (FP-SM)	• NPDES, Municipal Stormwater Permits • Flood Control and Storm Drainage Master Plans, Capital Improvement Plans • NPS Control Program – Tracking and Monitoring Council • FEMA Flood Maps • Flood Control Facility Plans • Dam Inspection Reports
Watershed Management, Habitat Protection and Restoration (WM-HP&R)	• Watershed Management Plans • Regional Monitoring Program for Trace Substances for San Francisco Bay • Surface Water Ambient Monitoring Program (SWAMP) • Regional Wetlands Monitoring Program • Habitat Conservation Plans • Bird Surveys conducted by Point Reyes Bird Observatory, Audubon Society, USGS and Institute for Bird Populations • Bay Area Macroinvertebrate Bioassessment Information Network (BAMBI) • California Natural Diversity Database (CNDDB) • ABAG land use and demographic reports • Bay Area Protected Lands Database • San Francisco Estuary Partnership Reports and Studies • Bay Area Air Quality Management District Monitoring Reports

H.2.4 Data Management

As part of the Bay Area IRWM Plan implementation, data will be collected and compiled at three levels: the project level, the functional area level, and the Plan level. At each of these levels, effective data management and dissemination is critical to successful IRWM Plan.

- **Project Level Data Management.** At the Project level, project proponents will be responsible for collecting information on project implementation status, as well as evaluating project performance with respect to the specific performance measures established for their project. This information will be disseminated to the Functional Areas and other appropriate agencies on a quarterly basis.
- **Functional Area Data Management.** At the Functional Area level, information from the project proponents will be compiled, along with information from other monitoring programs, to assess progress toward achieving functional area objectives. This information will be disseminated to the Bay Area IRWM Plan Coordinating Committee (CC) on an annual basis to support the Plan assessment and periodic updates to information in the Plan as needed.
- **Plan Level Data Management.** The CC will collect the information gathered by the Functional Areas to assess Plan performance in contributing to regional goals, objectives, and IRWMP vision. The CC will compile and manage this information, and will ultimately disseminate the data to the public.

The data collected will be maintained in a data library that will be publicly accessible from the IRWMP website. While every effort will be made to ensure open, public access to data used in the Plan performance assessment, confidentiality agreements may be required to obtain a portion of the data used to support Plan assessment. In these cases, data availability will be managed in a manner consistent with the terms of the individual confidentiality agreements.

The data collected during the implementation of the Bay Area IRWMP can also support several Statewide data needs. For example, DWR may use information developed through the IRWMP information updates to support updates to the California Water Plan, and the San Francisco Bay RWQCB may use the data as part of the new data standardization and data provision requirements that are being considered for 401-certification permits.

Data collected as part of IRWM Plan project implementation will be required to be comparable with applicable statewide data collection programs such as the Surface Water Ambient Monitoring Program (SWAMP) and the Groundwater Ambient Monitoring and Assessment (GAMA) programs. Upon completion of the IRWM Plan performance assessment, the project-specific data collected, along with its associated quality assurance/quality control information, would be provided to the state in a format which could be easily integrated into statewide data collection and tracking programs. As appropriate, the Coordinating Committee will also encourage project proponents to contribute data to the following statewide data programs:

- California Environmental Resources Evaluation System (CERES), an information system developed by the California Resources Agency to facilitate access to natural resource data.
- California Environmental Data Exchange Network (CEDEN), a website developed by the State for coordinated data sharing.

This Page Intentionally Left Blank

Section I Employment of Integrated Resource Management Strategies

This section presents the mix of water management strategies planned or proposed for implementation throughout the Bay Area, and outlines ways in which these water management strategies can work together to achieve the regional water management goals and objectives.

I.1 Integration Approach

The integration of water management strategies across the Bay Area is achieved through collaboration among agencies and jurisdictions across the region, geographically within watersheds, and through implementation of multiple water management strategies within individual organizations. The Bay Area IRWMP approach to integration of water management strategies is based on the following method:

1. Document the integrated mix of water management strategies.
2. Identify opportunities for integrating projects.
3. Describe how strategies work together to achieve goals.
4. Describe value and benefit of integrating multiple strategies.

I.2 Strategies, Projects and Programs Included in the IRWM Plan

A wide variety of water management strategies, projects, and programs were selected for inclusion in the Bay Area IRWM Plan (**Table 10**). While the projects and programs included in the Bay Area IRWM Plan may be classified based on the primary water management strategy employed, each of these projects or programs combines multiple aspects of water resources management. **Table 11** presents a snapshot of the matrix that was developed for the existing IRWM Plan to identify the integration of multiple water management strategies for each project and also across all projects.

Table 10: Water Management Strategies Considered in the IRWM Plan

Water Management Strategies Considered	
▪ Ecosystem Restoration ▪ Environmental and Habitat Protection and Improvement ▪ Water Supply Reliability ▪ Flood Management ▪ Groundwater Management ▪ Recreation and Public Access ▪ Storm Water Capture and Management ▪ Water Conservation ▪ Water Quality Protection and Improvement ▪ Water Recycling ▪ Wetlands Enhancement and Creation ▪ Conjunctive Use ▪ Desalination	▪ Imported Water ▪ Land Use Planning ▪ Non-point source (NPS) Pollution Control ▪ Surface Storage ▪ Watershed Planning ▪ Water and Wastewater Treatment ▪ Water Transfers ▪ Interties ▪ Infrastructure Reliability ▪ Regional Cooperation ▪ Education and Outreach ▪ Monitoring and Modeling ▪ Groundwater Banking

The water management strategies encompass the Bay Area's water management approach for meeting the San Francisco Bay Area IRWM Plan's regional goals and objectives. As part of the Plan update, the Coordinating Committee (CC) will review these strategies for consistency with Proposition 84 IRWM Plan Standards for Resource Management Strategies, Statewide Priorities and Program Preferences. In addition, the concerns of stakeholders regarding additional water management issues can be raised and discussed at the monthly CC meetings for consideration and inclusion in the updated Plan.

Table 11: Example Project Matrix Showing Integration of Water Management Strategies

Project Name	Ecosystem Restoration*	Environmental and Habitat Protection and Improvement*	Water Supply Reliability*	Flood Management*	Groundwater Management*	Recreation and Public Access*	Storm Water Capture and Management*	Water Conservation*	Water Quality Protection and Improvement*	Water Recycling*	Wetlands Enhancement and Creation*	Conjunctive Use	Desalination	Imported Water	Land Use Planning	Non-Point Source Pollution Control	Surface Storage	Watershed Planning	Water and Wastewater Treatment	Water Transfers	Interties	Infrastructure Reliability	Regional Cooperation	Education and Outreach	Monitoring and Modeling	Groundwater Banking
PG&E Contra Costa Power Plant #8 Recycled Cooling Water (DDSD)*		◇	◇						◇	◈									◇				◇	◇	◇	
Phase 2 – Niles Cone Groundwater Recharge and Fish Passage Program (ACWD)*	◇	◇	◇		◇	◇	◇		◇			◇						◆					◇	◇	◇	◇
Phase II Recycled Water Program – City of Petaluma (City of Petaluma)*			◇						◇	◈									◇				◇	◇	◇	
Pilarcitos Creek Integrated Watershed Management Plan Development and Implementation (SFPUC)*	◇	◈	◇	◇	◇	◇			◇	◇	◇	◇						◇	◇				◇		◇	
Pinole Creek Restoration and Greenway Park (CCC FC&WCD)*	◇	◇		◈		◇			◇	◇	◇	◇											◇		◇	
Pittsburg Recycled Water Implementation (DDSD)*			◇						◇	◈									◇				◇	◇	◇	
Pleasant Hill, Zone 1 Recycled Water Project (CCCSD)*			◇						◇	◈									◇				◇	◇	◇	
Protection from Tidal Flooding (City of Burlingame)*	◇	◇		◈		◇	◇				◇				◇			◇					◇	◇	◇	
R10-2 Arroyo de la Laguna (ADLL) Improvement Project 2 (Zone 7)*		◇		◈		◇																	◇		◇	
R10-5 Arroyo de la Laguna Improvement Project 5 (Zone 7)*		◇		◈		◇																	◇		◇	
R3-2 Robertson Park Enhancement Project and Levee Construction (Zone 7)*		◇		◈		◇					◇											◇	◇		◇	
R3-3 Parks Floodplain Dedication and Levee Construction (Zone 7)*		◇		◈		◇																◇	◇		◇	
R3-4 Holmes Street Sedimentation Basin and Granada/Murrieta Protection and Enhancement Project (Zone 7)		◇		◈		◇					◇												◇		◇	
Recycled Water Conveyance Pipeline (Novato Sanitary District)*			◇						◇	◈									◇				◇	◇	◇	
Recycled Water Program for North Marin WD & Novato Sanitary District – Phase 1 (North Marin Water District)*			◇						◇	◈									◇				◇	◇	◇	
Reducing Women and Children's Exposure to Mercury in the Bay and		◇							◇							◇							◇	◈	◇	

I.3 Collaboration Among Functional Areas to Integrate Projects

Many of the agencies in the Water Supply-Water Quality (WS-WQ) and Wastewater-Recycled Water (WW-RW) Functional Areas have jurisdiction for both water and wastewater. In addition, water supply planning has historically required ongoing coordination between water supply and wastewater entities throughout the region. These existing forums were leveraged to ensure that ongoing coordination between the WS - WQ and WW- RW Functional Areas was maintained throughout Functional Area Document Development and identification of projects.

In the development of the Plan, the Flood Protection–Stormwater Management (FP-SM) and Watershed Management–Habitat Protection & Restoration (WM-HP&R) Functional Areas held meetings together to review the projects submitted for the IRWM Plan and identify

opportunities for integration. As a result of this effort, several projects were revised and recombined to more effectively serve the needs of the region.

As a result of these efforts, as well as the continued communication between Functional Area members, 21 projects were identified by both the FP-SM and WM-HPR functional areas, 9 projects were identified in both the WS-WQ and WW-RW functional areas, 1 project was identified by both the FP-SM and WW-RW functional areas, and 1 project was identified by the WS-WQ, WW-RW and WM-HP&R functional areas.

The Coordinating Committee and Project Screening subcommittee has continued this effort since the adoption of the Plan, and works closely with the Functional Areas to identify opportunities for integration when reviewing project submittals for funding grants.

This Page Intentionally Left Blank

Section J IRWM Plan Implementation and Expected Impacts and Benefits

J.1 Overview of Bay Area IRWMP Implementation Approach

The Bay Area IRWM Plan was adopted in December 2006. Following adoption, the Plan was implemented through execution of priority projects identified in the Plan by respective project proponents. Progress toward attaining the regional goals and objectives is reviewed by the Coordinating Committee (CC) and Functional Areas periodically. As a living document, additional work will be completed with the update of the IRWM Plan through an adaptive management framework.

J.2 Established Institutional Structure and Responsibilities

The Letter of Mutual Understandings signed by Bay Area agencies and groups established an institutional structure for overseeing IRWMP development, referred to as the San Francisco Bay Area Technical Coordinating Committee (TCC). The TCC was responsible for guiding development of the IRWM Plan. While this structure has been effective for developing the Plan, the TCC was reconstituted as the Bay Area Integrated Regional Water Management Plan Coordinating Committee (CC) after the Plan was adopted in November 2006 to cover the broader function of implementing the Plan. In addition, resource and regulatory agencies, non-governmental organizations (NGOs), environmental groups, business groups, the public, and other interested parties were invited to serve in an advisory role to the CC.

J.3 Near-term Implementation Actions after Plan Adoption

The following near-term implementation actions are identified in the existing IRWM Plan:

1. Continue to follow the LOMU for coordination and collaboration on implementation issues for the Bay Area IRWM Plan – with the routine inclusion of resource and regulatory agencies and NGOs in deliberations – in addition to completion of future work.
2. Reconstitute the TCC as the San Francisco Bay Area Integrated Regional Water Management Plan Coordinating Committee (CC) after the IRWMP is adopted.
3. Appoint two to three public agency representatives for each of the four service Functional Areas: Water Supply-Water Quality; Wastewater-Recycled Water; Flood Protection-Stormwater Management and Watershed Management-Habitat Protection & Restoration.
4. Invite non-public agency participants and community representatives to serve in an advisory role to the CC and to participate in monthly meetings with the CC.

5. The CC will define the process of implementation where coordination and collaboration are needed, including IRWM Plan performance tracking, monitoring and updating, and other mutually agreeable implementation activities.
6. Each service function area will update goals, objectives, and/or information on projects within its Functional Area as described in the IRWM Plan, as needed and subject to available funding.
7. The CC will, in consultation with resource and regulatory agencies and NGOs, compile the implementation priorities submitted by each Functional Area, develop and update overall regional implementation criteria and prioritized project lists that will be most eligible and competitive for federal and state grant funding.
8. The CC will, in consultation with resource and regulatory agencies and non-governmental organizations, periodically review the ongoing institutional structure and discuss whether improvements are needed and propose options for improvements to best serve IRWM Plan implementation needs effectively and meet the needs of the participating organizations.

J.4 Long-term Implementation Actions after Plan Adoption

The IRWM Plan also includes a list of potential functions of the long-term institutional structure, and identifies specific implementation tasks for participants of the IRWM Plan (**Table 12**).

Table 12: Proposed Institutional Structure Functions during IRWM Plan Implementation

	Structure	Potential Functions
NEAR-TERM PERIOD	Bay Area IRWMP CC[b]	▪ Provide decision-making authority for further development and/or implementation of the Plan. ▪ Foster partnerships and facilitate participation by a broad range of water resource management stakeholders, including environmental justice groups, resource agencies, public agencies, environmental groups, and the general public. ▪ Provide a regional forum for cross-jurisdictional coordination. ▪ Oversee continued outreach and data dissemination to stakeholders. ▪ Oversee plan implementation and evaluate cumulative Plan contributions toward achievement of regional goals. ▪ Periodically review and propose adjustments to regional goals and priorities. ▪ Propose alterations to project sequencing and Plan implementation based on performance data collected. ▪ Seek funding to support activities. ▪ Periodically review effectiveness of on-going organization
	Functional Areas	▪ Collect and compile project status and performance information on an annual basis ▪ Assess functional area performance in meeting goals and objectives ▪ Prepare annual reports on progress and submit to Bay Area CC ▪ Adjust functional area priorities as needed

	Structure	Potential Functions
	Project Proponents	▪ Ensure implementation of projects and compliance with regulatory and statutory requirements ▪ Prepare quarterly reports on project performance and submit to Functional Areas.
LONG TERM	Formal Entity[c]	▪ Address decision-making authority for further development and/or implementation of the Plan. ▪ Foster partnerships and facilitate participation by a broad range of water resource management stakeholders, including environmental justice groups, resource agencies, public agencies, environmental groups, and the general public. ▪ Provide a regional forum for cross-jurisdictional coordination. ▪ Oversee continued outreach and data dissemination to stakeholders. ▪ Oversee plan implementation and evaluate cumulative Plan contributions toward achievement of regional goals. ▪ Periodically review and propose adjustments to regional goals and priorities. ▪ Propose alterations to project sequencing and Plan implementation based on performance data collected. ▪ Act on and/or adopt any proposed IRWMP changes or adjustments. ▪ Act on and/or adopt proposed adjustments to project sequencing and Plan implementation based on performance data collected. ▪ Manage preparation of the Bay Area Proposition 50 Chapter 8 implementation grant applications. ▪ Administer distribution of State funding to regional projects.
	Project Proponents	▪ Ensure implementation of projects and compliance with regulatory and statutory requirements ▪ Prepare quarterly reports on project performance and submit to Functional Areas.

a. Functions assume adequate funding and resources are available.
b. In consultation with stakeholders including resource and regulatory agencies and NGOs.
c. Same as above.

As the IRWM Plan has moved into the implementation phase, the roles of the Functional Areas have also evolved and each has undertaken regional efforts, examples of which are noted below:

Water Supply/Water Quality

Implemented a regional water conservation outreach campaign during summer of 2007 ("Be a Water Savings Hero") in response to dry conditions and continued other regional projects such as a Clothes Washer Rebate program. The Bay Area Water Agencies Coalition (BAWAC) receives periodic updates on IRWM Plan activities and provides input to functional area representatives.

Wastewater/Recycled Water

Bay Area Clean Water Agencies (BACWA) produced a May 2007 report, entitled Importance of Recycled Water to the Bay Area and co-hosted a regional workshop on October 29, 2007 focused on Interagency Partnerships. BACWA also served as legal entity for the Prop 50 Round 1 Bay Area grant application and received notice in April 2007 of a $12.5 million IRWM grant award from DWR. BACWA receives periodic updates on IRWM Plan activities and provides input to functional area representatives on the CC.

Flood Protection/Stormwater Management

The Bay Area Flood Protection Agencies Association (BAFPAA) was formed during 2007. The membership includes Bay Area county flood control districts, cities and agencies with flood

control and stormwater management responsibilities. BAFPAA receives periodic updates on IRWM Plan activities and provided input to functional area representatives.

Habitat Protection/Watershed Management and Restoration

The State Coastal Conservancy acts as the lead coordinator for this functional area and coordinates with stakeholders, including non-governmental organizations, local conservancy groups, local agencies and others.

The State Coastal Conservancy convened a meeting of interested organizations identified with habitat protection and watershed management to obtain advice about San Francisco Bay Area IRWM Plan governance options to recommend at the CC's facilitated workshop on governance. In addition, the State Coastal Conservancy and the Regional Water Quality Control Board have been supporting since 2006, an effort referred to as the Bay Area Watershed Network (BAWN) and formed several workgroups to focus on issues common to all Bay Area watersheds.

Development of a collaborative regional water management portfolio for the San Francisco Bay Area is a work in progress. Each of the four Functional Areas has evolved and internal strengthening has occurred as lead functional area entities and processes have become more established (or been formed as in the case of BAFPAA). This strengthening has led to greater opportunity for integration as each Functional Area contributes in more meaningful ways at the CC and subcommittee levels.

This has also led to greater opportunity for integration at a regional level through development of projects such as the Mercury contamination and fish consumption project identified in 2007 in preparation for inclusion in an Implementation Grant proposal under Round 2 of the Proposition 50 IRWM Grant Program. In addition, the sub-regional approach for project selection will provide opportunities for greater integration at the sub-regional and local level since project ranking will be based on the goals and objectives in the Bay Area IRWM Plan.

J.5 Expected Impacts and Benefits of Plan Implementation

A detailed analysis of the impacts and benefits of the Plan and its implementation projects was undertaken as part of the Plan preparation. The IRWM Plan did not require preparation of a programmatic EIR under CEQA requirements since it consists of a planning study and basic data compilation that would not result in the disturbance of any environmental resource. Implementation of projects in the IRWM Plan and CEQA compliance for the projects would be the responsibility of the project proponent and any applicable project partners. **Table 13** presents the screening level assessment of benefits and impacts that are typically associated with the various water management strategies included in the existing IRWM Plan.

Table 13: Typical Benefits and Impacts by Water Management Strategy

Water Management Strategy	Typical Benefits	Typical Impacts
Ecosystem Restoration	- Protection and enhancement of physical and biological processes - Increased critical habitat - Reduced flooding - Improved Water Quality	- Temporary construction impacts - Changes in local species composition and diversity
Env. and Habitat Protection and Improvement	- Restoration of hydrologic and geomorphic function - Addition of cover, nesting and forage areas - Improved access to steelhead spawning and rearing habitats and improved mobility. - Improved Water Quality	- Temporary construction impacts - Changes in or loss of sensitive habitat areas - Changes to the hydrologic makeup of site - Effects on land use planning and land values
Water Supply Reliability	- Reliable municipal and domestic water supplies - Reliable industrial supplies - Protection of watershed headlands	- Temporary construction impacts - Changes to visual quality adjacent to above-ground infrastructure - Loss or disturbance of biological resources - Potential growth-inducing effects
Flood Management	- Protection of public safety and property - Habitat and groundwater recharge benefits	- Temporary construction impacts - Changes in the frequency, duration and magnitude of storm flows and flooding - Water quality and hydrology impacts
Groundwater Management	- Supply reliability - Protection against overdraft - Potential for new habitat areas	- Temporary construction impacts - Inundation of potential habitat areas
Recreation and Public Access	- Recreation opportunities - Education opportunities	- Temporary construction impacts - Potential impacts to water quality and natural resources
Storm Water Capture and Management	- Reduction of downstream flooding impacts - Water supply, water quality, ecosystem restoration, recreation and public health benefits	- Temporary construction impacts - Groundwater contamination
Water Conservation	- Supply reliability without construction-related impacts - Reduced demands on imported water supplies	- Growth-inducing effects
Water Quality Protection and Improvement	- Reduced pollutant loading - Improved drinking water quality - Improved well-being of terrestrial and aquatic species - Reduced public health hazard	- Temporary construction impacts - Brine disposal impacts from treatment processes - Disturbance of sensitive species during restoration
Water Recycling	- Improved water supply reliability - Drought-proof supply - Preservation of potable supplies for drinking water - Reduced dependence on imported supplies	- Temporary construction impacts - Water quality impacts from nutrient and salinity loading and emerging contaminants - Increased energy usage and costs from treatment, - Potential growth-inducing impacts

Water Management Strategy	Typical Benefits	Typical Impacts
Wetlands Enhancement and Creation	- Improved nesting, foraging and breeding grounds for waterfowl, fisheries and small mammals - Preservation of rare and endangered species and environmental habitat	- Temporary construction impacts - Changes in species distribution
Conjunctive Use	- Improved water supply reliability - Increased flexibility - Protection against overdraft and seawater intrusion - Reduced dependence on imported supplies during dry periods	- Temporary construction impacts - Increased energy usage and costs from pumping - Potential growth-inducing impacts
Desalination	- New potable water supply - High quality, drought proof supply - Reduced dependence on imported supplies.	- Temporary construction impacts - Water quality impacts from brine disposal - Increased energy usage and costs from treatment, - Potential growth-inducing impacts
Imported Water	- Improved water supply reliability - Improved water quality - Reduced treatment costs and public health risks from disinfection byproducts -	- Temporary construction impacts - Potential impacts to natural stream flows and habitat associated with construction of conveyance facilities
Land Use Planning	- Improved coordination and collaboration - Protection of sensitive habitats	- Temporary construction impacts
NPS Pollution Control	- Improved health of water bodies and wildlife dependent upon those water bodies - Improved coordination and collaboration	- Temporary construction impacts - Reduction in developable land
Surface Storage	- Improved water supply reliability - Hydro-electric benefits - Flood plain management benefits - Protection against global warming impacts	- Temporary construction impacts - Impacts to local habitat around the storage structure - Impacts to water quality from sedimentation and temperature stratification - Potential growth-inducing impacts
Watershed Planning	- Recreation and education opportunities - Improved coordination and collaboration - Protection of sensitive habitats - Reduced pollutant loading - Improved fish passage	- Temporary construction impacts
Water and Wastewater Treatment	- Protection of human health - Protection of the quality of receiving water bodies - Protection of the health of aquatic and riparian species - Improved supply reliability	- Temporary construction impacts - Visual impacts from above-ground facilities - Water quality impacts from process waste streams - Noise, vibration and air quality impacts from operation of power generators
Water Transfers	- Improved water supply reliability - Operational flexibility - Beneficial use of surplus irrigation supplies	- Potential growth-inducing impacts - Third Party Impacts
Interties	- Improved water supply reliability during emergencies (earthquakes, electrical outages, sabotage).	- Temporary construction impacts - Impacts to land use and habitat in areas of facility construction

Water Management Strategy	Typical Benefits	Typical Impacts
Infrastructure Reliability	- Improved water supply reliability - Reduced worker and public safety risk - Improved operation and efficiency - Reduced risk of damage and/or outage during catastrophic events	- Temporary construction impacts - Impacts to land use and habitat in areas of facility construction
Regional Cooperation	- Improved likelihood of realizing benefits of other water management strategies - Lessons learned and efficiencies from integrated planning process	None
Education and Outreach	- Increased volunteerism - Increased stakeholder support	None
Monitoring and Modeling	- Better understanding of watershed and water quality conditions, hydrograph and flow patterns, water supply reliability and wildlife populations and movement.	None
Groundwater Banking	- Improved water supply reliability - Operational flexibility	- Potential growth-inducing impacts

This Page Intentionally Left Blank

Section K How the Existing Plan Meets Prop 84 IRWM Plan Standards

The previous sections provided a description of the Bay Area IRWM region governance structure and processes, physical characteristics, and a discussion of previous efforts or activities that relate to the development of the IRWM Plan. In **Tables 14 to 29**, the existing IRWM Plan is compared to the current Plan standards for each section to evaluate how the Plan meets the current standards, and identifies gaps that will be addressed in the Work Plan for the Plan update.

Table 14: Evaluation of Existing Plan to Governance Plan Standard

Plan Standard	How existing Plan meets current standards and gaps that need to be addressed in the Plan update
GOVERNANCE	
Group responsible for development of the Plan	The existing Plan meets this standard.
Plan adoption	The existing Plan meets this standard. The updated Plan will be presented to the RWMG for adoption.
Description of chosen governance structure	The existing Plan meets this standard, but the description will be updated to include refinements to the governance structure since Plan adoption, to be consistent with the structure presented in the Region Acceptance Process.
Public outreach and involvement process	The Coordinating Committee (CC) conducts outreach through the functional areas and various stakeholder groups to involve local stakeholders in the IRWM process. To further enhance the outreach and involvement process, the CC created subregions within the IRWM region, and designated subregional contacts to lead outreach efforts in each subregion. The Plan update will include a description of the process of creating the subregions and how they are envisioned to operate.
Effective decision making	The governance structure as shown in Figure 1 was improved with Plan adoption to ensure better coordination among the functional areas, and a more effective and consensus-based decision making approach. Subcommittees have been created to support the CC in making informed decisions. This approach will be described in the Plan update.

Balanced access and opportunity for participation in the IRWM process	The CC meeting is conducted in the State Building in Oakland, close to public transportation routes, on a monthly or bi-monthly basis. The date and time of the meeting is fixed every month to ensure consistency and clarity in terms of scheduling. Meeting agendas and materials are posted on the website and emailed to stakeholders a week before the meeting to review. The CC meetings are well-attended and typically include participants from State and federal, regional and local agencies, as well as participants from non-profit organizations. Approaches to improve the level of DAC representation and participation will be addressed in the Plan update.
Effective communication – internal and external to the IRWM region	The governance structure of the CC facilitates effective communication within the region through meetings held at various levels (e.g. CC, subcommittee, functional areas, subregions). The CC has maintained communication externally with adjacent IRWM regions throughout implementation of the Plan, and recently, as part of the RAP, the CC worked with adjacent IRWM regions and resolved regional overlaps and gaps. The communication process will be described in the Plan update.
Long-term implementation of the IRWM Plan	The CC has developed a governance structure that includes procedures for CC Chair/Vice-Chair succession, as well as succession for the voting members, to ensure long-term oversight during implementation of the IRWM Plan. The procedures for succession and continuation of CC operations will be described in the Plan update.
Coordination with neighboring IRWM efforts and State and federal agencies	In addition to coordinating with neighboring IRWM regions as described above, the CC coordinates with State and federal agencies via CC and subcommittee meetings to identify IRWM project opportunities. This process and outcomes of the process will be described in the Plan update.
The collaborative process(es) used to establish Plan objectives	The current Plan objectives are based on Prop 50 requirements and began with the development of functional area documents (FADs), which were integrated to identify overarching objectives for the Bay Area IRWMP. Using the existing Plan objectives as a basis, the CC will review the objectives in relation to Prop 84 requirements. The collaborative process used to establish the revised Plan objectives will be documented in the Plan update.

How interim changes and formal changes to the IRWM Plan will be performed	The CC has developed a process for adding projects to the IRWMP, which involves development of the proposed additions as an appendix document in the Plan. The information is reviewed by the relevant subcommittee, and then presented to the CC for review and adoption into the Plan by consensus. The Plan update will include review and description of the process for making these changes, as well as development of processes for performing other kinds of changes to the Plan, such as incorporating updated Climate Change material.
Updating or amending the IRWM Plan	The CC will develop this process further and will include a description of the procedure for future Plan updates or amendment in the updated Plan.

Table 15: Evaluation of Existing Plan to Region Description Plan Standard

Plan Standard	How existing Plan meets current standards and gaps that need to be addressed in the Plan update
REGION DESCRIPTION	
Description of the watersheds and the water systems • Major infrastructure (water related, flood management) • Major land use divisions • Quality and quantity of water resources within the region • Areas and species of biological significance and other sensitive habitats (e.g. MPAs and impaired water bodies within the region)	The existing description meets the Plan Standards, but the data or information presented in some sections are no longer current and will need to be updated (e.g. list of impaired water bodies).
Description of the internal boundaries	The existing description meets the Plan Standards in general; however the subregion areas were created after Plan adoption and are not described in the existing Plan, so the subregions will be illustrated and described in the Plan update.
Description of water supplies and demands for a minimum 20-year planning horizon, including a discussion of important ecological processes and environmental resources and environmental water demands, and potential effects of climate change on water demand and supplies.	The existing description of Bay Area Water Supplies in the Plan will be updated with new water demand/supply projections. The updated region description will also include an analysis of the effects of climate change on these projections.
Comparison of current and future water quality conditions in the region	The existing Plan does not compare current and future water quality conditions in the region. This section will be developed for the Plan update.

Description of the social and cultural makeup of the regional community • Identify important socio-cultural values • Identify DACs • Economic conditions and trends • Efforts to involve and collaborate with tribal governments	The existing Plan does not meet Plan Standards in terms of describing the location of tribal areas and efforts to involve tribal governments in the IRWM process. The information on social and cultural composition, location and description of DACs, and economic conditions and trends in the existing Plan will be updated using 2010 census information, and more recent economic and demographic data.
Description of major water-related objectives and conflicts • Identify problems • Identify objectives, implementation strategies and projects that provide resolution	The process used previously for the identification of problems and development of objectives under Prop 50 will be refined to align with the governance structure and decision-making process of the CC. In addition, events since Plan adoption may have resulted in changes in the definition of problems; therefore the objectives and implementation strategies will be revisited and revised in the Plan update, using a collaborative approach.
Explanation of how the IRWM boundary was determined and why the region is an appropriate area for IRWM planning	The definition and explanation of the IRWM boundary meets the current Plan standard and will not require an update.
Identification of neighboring and/or overlapping IRWM efforts and explanation of the planning/working relationship that promotes cooperation and coordination between regions	The existing Plan does identify adjacent and overlapping IRWM regions but does not describe the planning/working relationship with these regions, and agreements reached since Plan adoption. The Plan update will include a description of efforts made by the CC to coordinate with neighboring IRWM regions to resolve overlaps and gaps, and the IRWM regions established and documented in preparation for the Region Acceptance Process.

Table 16: Evaluation of Existing Plan to Objectives Plan Standard

Plan Standard	How existing Plan meets current standards and gaps that need to be addressed in the Plan update
OBJECTIVES	
Clearly present Plan objectives	The existing Plan meets Plan Standards in terms of presenting IRWM Plan goals and objectives. As part of the Plan update, the objectives will be reviewed and revised to reflect changing regional conditions and new priorities, including those related to climate change.
Describe the process used to develop the objectives	The process described in the existing Plan pertains to the development of the IRWM Plan. The process for reviewing and revising the objectives in the Plan may be similar to the previous process, but may be more streamlined and integrated using the CC's governance and decision-making framework. The new process will be described in the Plan update.
Plan objectives must address major water-related issues and conflicts of the region	The existing Plan meets Plan Standards in terms of presenting challenges and conflicts of the regions; but some of the information is dated and will be reviewed and updated in the Plan update.
Objectives must be measurable by some practical means so achievement of objectives can be monitored	The existing Plan does not identify metrics that evaluate the performance of the Plan with regards to meeting Plan objectives. This gap will be addressed in the Plan update.
Explain methodology for prioritizing objectives in the region. If not prioritized, explain why.	The existing Plan does not prioritize the Plan objectives but identifies regional priorities, long-term and short-term, and Statewide priorities which are used in the project screening process. The Plan update will describe the linkage between regional and Statewide priorities to the Plan objectives and develop a methodology to prioritize Plan objectives.

Table 17: Evaluation of Existing Plan to Resource Management Strategies Plan Standard

Plan Standard	How existing Plan meets current standards and gaps that need to be addressed in the Plan update
RESOURCE MANAGEMENT STRATEGIES	
Document the range of RMS considered to meet the IRWM objectives and identify which RMS were incorporated into the IRWM Plan	The existing IRWM Plan lists the range of Water Management Strategies considered and identifies strategies that are incorporated into the Plan; this list will be updated to include RMS listed in the CWP Update 2009.
The effects of climate change on the IRWM region must factor into the consideration of RMS	The existing IRWM Plan does not meet this standard and it will be incorporated into the Plan update.
RMS to be considered must include, but are not limited to, the RMS found in Vol 2 of the CWP Update 2009	The existing IRWM does not meet this standard and it will be incorporated into the Plan update.

Table 18: Evaluation of Existing Plan to Integration Plan Standard

Plan Standard	How existing Plan meets current standards and gaps that need to be addressed in the Plan update
INTEGRATION	
The IRWM Plan must contain structure and processes that provide opportunities to develop and foster integration	The existing IRWM Plan meets this standard. The regional goals and objectives, which address all aspects of water resource management, provide a structure that fosters integration. The regionalization and integration process provides a mechanism for integrating projects. Stakeholder/institutional integration is achieved in the existing Plan through the integration of the functional area representatives into the Coordinating Committee's governance structure, as well as the broad range of stakeholders involved in the subcommittees. Resource integration is addressed in the existing Plan through the integration of water management strategies across the Bay Area region through collaboration among agencies and jurisdictions across the region, and geographically within watersheds, and through implementation of multiple water management strategies within organizations. Integration at the project level is achieved in the existing Plan through the identification of synergistic projects and development of projects that integrate multiple water management strategies and achieve multiple benefits for the region. These processes will be continued in the Plan update in governance, stakeholder outreach, data management, project review or selection.

Table 19: Evaluation of Existing Plan to Project Review Process Plan Standard

Plan Standard	How existing Plan meets current standards and gaps that need to be addressed in the Plan update
PROJECT REVIEW PROCESS	
Describe procedures for submitting a project to the RWMG	The existing IRWM Plan did not identify an overall procedure for submitting a project to the CC; instead, each functional area had different procedures for project submittals. Since the adoption of the Plan, the CC and subcommittees have consolidated the procedures for submitting projects to the CC into an integrated process that will be described in detail in the Plan update.
Describe procedures for review of projects considered for inclusion into the IRWM Plan. The selection process (es) must include the components as described in Plan Standards.	The existing IRWM Plan describes how projects included within each functional area document were screened for inclusion in the Plan based on screening methods and criteria defined by each functional area. The screening method and criteria used to advance projects to the IRWM Plan varied by functional area. Since Plan adoption, the CC and subcommittees have developed a Project Review Process that applies the same screening procedure to all projects to be included in the Plan. During the Plan update, this Project Review Process will be revised to include Review Factors and other components as stated in the Guidelines and Plan Standards. The revised Project Review Process will be described in the Plan update.
Displaying the list of selected projects	The existing IRWM Plan meets current Plan Standards and displays a list of selected projects; however, this list is now dated and will be updated in the Plan update.

Table 20: Evaluation of Existing Plan to Impact and Benefit Plan Standard

Plan Standard	How existing Plan meets current standards and gaps that need to be addressed in the Plan update
IMPACT AND BENEFIT	
Discuss potential impacts and benefits of Plan implementation: • Within the IRWM Region • Between regions • Directly affecting DAC, EJ related concerns and Native American tribal communities	The existing IRWM Plan provides a screening-level discussion of the potential impacts and benefits of implementation of the IRWM Plan at the regional water strategy level and then at project-specific level. However, the Plan is not clear in differentiating impacts and benefits within the IRWM region and between regions. The existing Plan does not include a complete discussion of impacts and benefits affecting DACs and EJ communities due to the need for more direct input from the communities. The existing Plan also does not include discussion of impacts and benefits affecting Native American tribal communities. These gaps will be addressed in the Plan update.

Table 21: Evaluation of Existing Plan to Plan Performance and Monitoring Plan Standard

Plan Standard	How existing Plan meets current standards and gaps that need to be addressed in the Plan update
PLAN PERFORMANCE AND MONITORING	
Describe a method for evaluating and monitoring the RWMG's ability to meet the objectives and implement the projects in the Plan	The existing Plan contains performance metrics for measuring implementation performance for each project in the Plan. The performance metrics are intended to serve as measurable benchmarks for establishing success of projects following implementation. However, metrics to measure the performance of projects with respect to meeting project objectives have not been developed. On a Plan assessment level, metrics to measure the progress towards achievement of the IRWM Plan's objectives have not been developed. This gap will be addressed in the Plan update.

Table 22: Evaluation of Existing Plan to Data Management Plan Standard

Plan Standard	How existing Plan meets current standards and gaps that need to be addressed in the Plan update
DATA MANAGEMENT	
Describe the process of data collection, storage and dissemination to IRWM participants, stakeholders, the public, and the State (Data in this standard includes technical information such as designs, feasibility studies, reports, and information gathered for a specific project in any phase of development including the planning, design, construction, operation and monitoring of a project	The existing IRWM Plan meets Plan Standards in terms of describing the process and approach to data management and dissemination. However, some of the information presented in the existing Plan is old (e.g. data gaps, types of data to be tracked by functional areas, etc.) and need to be updated. Additionally, the existing IRWM Plan does not fully describe the functionality of the IRWM website as a data management tool for the CC and project proponents to share regional and project information. This will be included in the Plan update, as will adding functionality to the IRWM website so that it may function as planned.

Table 23: Evaluation of Existing Plan to Finance Plan Standard

Plan Standard	How existing Plan meets current standards and gaps that need to be addressed in the Plan update
FINANCE	
List known as well as possible funding sources, programs, and grant opportunities for the development and ongoing funding of the IRWM Plan	The existing Plan meets the Plan Standard in that it lists potential funding sources for projects in the Plan as part of Plan implementation. Plan administration is currently financed through in-kind services provided by CC members, as well as financial contributions made by the functional areas. The information on projects and funding sources is no longer current and will be updated.

List the funding mechanisms, including water enterprise funds, rate structures, and private financing options, for projects that implement the IRWM Plan	As noted above, the existing Plan does identify the funding sources for projects in the Plan, but it does not necessarily describe the funding mechanisms. This gap will be addressed in the Plan update.
Explain the certainty and longevity of known or potential funding for the IRWM Plan and projects that implement the Plan	The existing Plan does not meet this Plan Standard and will address this in the Plan update.
Explain how operation and maintenance (O&M) costs for projects that implement the IRWM Plan would be covered and the certainty of operation and maintenance funding	The existing Plan does not meet this Plan Standard and will address this in the Plan update.

Table 24: Evaluation of Existing Plan to Technical Analysis Plan Standard

Plan Standard	How existing Plan meets current standards and gaps that need to be addressed in the Plan update
TECHNICAL ANALYSIS	
Document the data and technical analyses that were used in the development of the IRWM Plan	The existing Plan meets the Plan standard to the extent that it documents the data, technical methods and analysis used in the development of the Plan. As part of the Plan update, this section would include documentation of the data and technical analyses that were used to update the Plan.

Table 25: Evaluation of Existing Plan to Relation to Local Water Planning Plan Standard

Plan Standard	How existing Plan meets current standards and gaps that need to be addressed in the Plan update
RELATION TO LOCAL WATER PLANNING	
Document the local water plans used in the IRWM Plan	The existing IRWM Plan provides a general description of each category of local water plans used in the IRWM Plan; however this list must be made more specific and updated, and will be addressed in the Plan update.
Discuss how the IRWM plan relates to planning documents and programs established by local agencies	The existing IRWM Plan discusses this and meets current Plan Standards.
Describe the dynamics between the IRWM Plan and local planning documents	The existing IRWM Plan does include discussion of the dynamics between the IRWM Plan and local planning documents in the context of the functional areas (Water Supply-Water Quality; Wastewater-Recycled Water; Flood Protection-Stormwater Management; and Watershed Management-Habitat Protection & Restoration), but does not cover the full list of local plans identified in the Guidelines, which will be addressed in the Plan update.

Table 26: Evaluation of Existing Plan to Relation to Local Land Use Plan Standard

Plan Standard	How existing Plan meets current standards and gaps that need to be addressed in the Plan update
RELATION TO LOCAL LAND USE	
Document current relationship between local land use planning, regional water issues and water management objectives	The existing IRWM Plan meets current Plan Standards to the extent that it describes the relationship between General Plans and Specific Plans and the IRWM planning process. However, the information presented in the existing Plan is dated and will be reviewed and updated.
Document future plans to further a collaborative, proactive relationship between land use planners and water managers	The existing IRWM Plan describes coordination with local land use planners in the Bay Area counties via ABAG and SFEP for the development of the IRWM Plan, but does not document future plans. An approach for future collaboration and communication between land use agencies and the CC will be described in the Plan update.

Table 27: Evaluation of Existing Plan to Stakeholder Involvement Plan Standard

Plan Standard	How existing Plan meets current standards and gaps that need to be addressed in the Plan update
STAKEHOLDER INVOLVEMENT	
Describe public process that provides outreach and an opportunity to participate in the IRWM Plan development and implementation	The existing Plan describes the public process that provided stakeholders opportunities to participate in the development of the IRWM Plan and the functional area documents that serve as a baseline to the IRWM Plan; however, this pertains to Plan development so the description must be updated. Outreach for the Plan update and future implementation will be conducted on a similar basis through the CC's established governance structure; this process is documented in the RAP and will be incorporated into the Plan update, as well as additional outreach that may be developed during the Plan update process.

Describe process to identify, inform, invite, and inform stakeholder groups in the IRWM process, including mechanisms and processes	The existing Plan describes the process that was used to identify and involve Bay Area IRWMP stakeholders for development of the Plan. Since adoption of the Plan, the CC has expanded avenues for identifying stakeholders (e.g. subregional process) and has created mechanisms such as CC meetings and subcommittee meetings and website/email announcements to invite stakeholder participation in the IRWM process. The description in the existing Plan will be updated to reflect improvements in the process since Plan adoption and also, the next steps necessary to address gaps in the process. The Plan update will also include some level of capacity building in order to improve functionality of subregions as an outreach mechanism.
Discuss how the RWMG will endeavor to involve DACs and Native American tribal communities	The existing Plan describes efforts to involve DACs and EJ communities in the development of the Plan, but does not address Native American tribal communities. In addition to the focus areas identified in the existing Plan, the CC has found other gaps/issues related to DAC participation since Plan adoption that will be addressed in the Plan update. The Plan update will discuss ways to better identify DACs/EJ communities, and make participation in the IRWM process more accessible and effective for DAC representatives.
Describe decision-making process including IRWM committees, roles or positions that stakeholders can occupy and how a stakeholder goes about participating	The existing Plan does not fully describe the decision-making process of the IRWM CC. This process is described in the RAP document and will be included in the Plan update. The Plan update will also outline clearly roles and positions that stakeholders can occupy and how they would go about participating.
Discuss how stakeholders are necessary to address the objectives and resource management strategies of the IRWM Plan and are involved or invited to be involved in Plan activities	The existing Plan describes how stakeholder involvement was important in the development of the Bay Area IRWM Plan in general terms, but does not specifically identify how they are necessary to address the objectives and RMS of the IRWM Plan. These linkages will be analyzed and described in the Plan update. In addition, the collaborative process that will be used for the review and update of objectives and RMS will be described.
Discuss how collaborative processes will engage a balance of the interest groups regardless of their ability to contribute financially to the IRWM process	CC meetings are open to all interested parties, and participants from non-profit organizations frequently attend these meetings even though they do not contribute financially to the IRWM process. However, the existing Plan does not discuss the process of engaging or providing support to interest groups to participate in the IRWM process if they are not able to contribute financially to the IRWM process. This has been recognized as a gap in the Plan and will be addressed in the Plan update.

Table 28: Evaluation of Existing Plan to Coordination Plan Standard

Plan Standard	How existing Plan meets current standards and gaps that need to be addressed in the Plan update
COORDINATION	
Identify a process to coordinate water management projects and activities of participating local agencies and local stakeholders to avoid conflicts and take advantage of efficiencies	The existing IRWM Plan identifies coordination with State and federal agencies but does not adequately address a process to coordinate projects with participating local agencies and local stakeholders and therefore does not meet current Plan Standards. This gap will be addressed in the Plan update by incorporating information developed in the RAP.
Identify other neighboring IRWM efforts and the way cooperation or coordination with these other efforts will be accomplished and discuss any ongoing water management conflicts with adjacent IRWM efforts	The existing IRWM Plan describes neighboring IRWM regions and provides a summary of IRWM efforts but does not address cooperation or coordination issues. This gap will be addressed in the Plan update by incorporating information developed in the RAP.
Identify areas where a State agency or other agencies may be able to assist in communication, cooperation, or implementation of IRWM Plan components, processes, and projects, or where State or federal regulatory decisions are required before implementing the projects	The existing IRWM Plan includes a description of the role of State and federal agencies in IRWM Plan development, but needs to be updated to reflect new relationships that have been established since Plan adoption.

Table 29: Evaluation of Existing Plan to Climate Change Plan Standard

Plan Standard	How existing Plan meets current standards and gaps that need to be addressed in the Plan update
CLIMATE CHANGE	
Discuss the potential effects of climate change on the IRWM region, including an evaluation of the IRWM region's vulnerabilities to the effects of climate change and potential adaptation responses to those vulnerabilities	The existing IRWM Plan provides a brief description of the potential effects of climate change, but does not evaluate the region's vulnerabilities to the effects of climate change and potential adaptation responses. These gaps will be addressed in the Plan update.
Describe a process that discloses and considers GHG emissions when choosing between project alternatives	The existing IRWM does not meet this Plan Standard.

This Page Intentionally Left Blank